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GILMAN'S RURAL WORLD

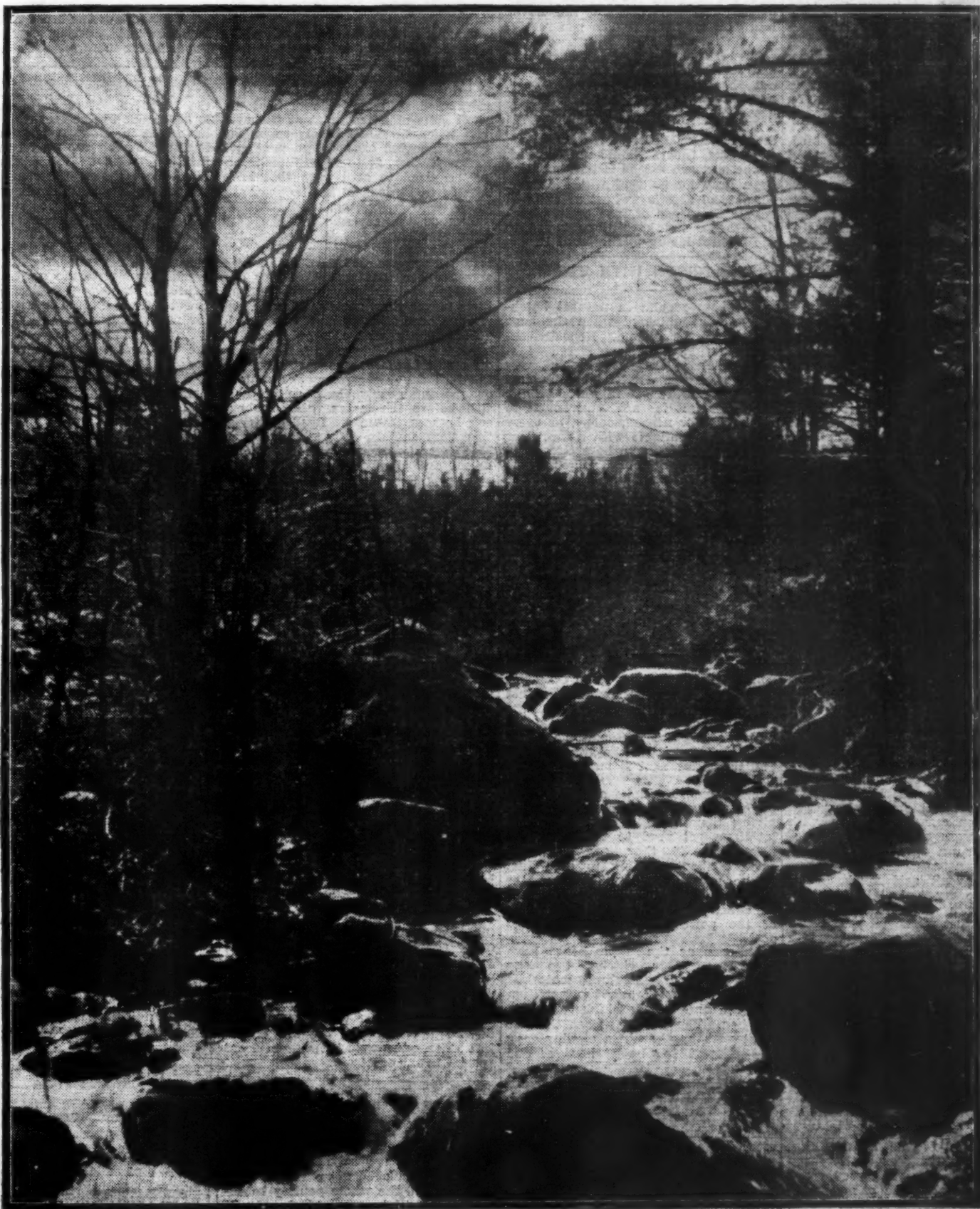
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OLDEST AGRICULTURAL AND LIVE STOCK JOURNAL IN THE MISSISSIPPI VALLEY

Sixty-Seventh Year.

ST. LOUIS, MO., FEBRUARY 26, 1914.

Volume LXVII. No. 9.



IN THE POULTRY YARD

GRAIN FOR POULTRY.

Corn is more commonly fed to poultry, in the United States, than any other grain, and, when properly balanced with other feeds, is one of the most valuable grains we have. Recent experiments indicate that corn is more easily and thoroughly digested than other grains. For growing stock or laying hens, from 30 to 35 per cent of the ration should consist of corn.

Wheat is probably the best grain to feed singly. In Europe and Canada it is more largely fed than any other grain. Wheat screenings, when one can get them clean, are superior to plump wheat for laying hens, as they contain more protein, and are therefore not so fattening.

Oats, being nearest to a balanced ration, should be an excellent poultry feed, but, owing to their thick hulls, they are not much relished by the fowls. By soaking in water, or sprouting, oats may be made very much more palatable.

Barley is an excellent poultry feed, and some poultrymen feed it when they cannot get corn. We find it a splendid grain for fattening purposes, and when cracked it is splendid for little chicks.

Buckwheat and millet make valuable additions to any whole-grain mixture, when fed in moderate proportions.—C. E. Brown, Poultryman.

TO SUCCEED WITH POULTRY.

The successful poultryman has either eggs or birds to sell every month in the year. The farmer can do as well. Select a breed that "looks good to you," give it intelligent care, stay with it and results will follow.

If you wish to make a specialty of eggs, select a strain of layers of a laying breed. Give them plenty to eat. I say, plenty to eat. Yes, be sure to give them plenty to eat. "Too fat," did I hear you say? When you find a hen too fat to lay, she is then in prime condition for the table; dress her for your own table or send her to market.

Feed a variety of home-raised feed, such as wheat, oats, corn, peanuts, millet seed, sorghum seed and cowpeas. For late spring, summer and fall I want nothing better than Bermuda grass. But for winter and early spring, crimson clover, rape, oats and rye fill the bill for green stuff. Of course, the roosting quarters must be comfortable and clean. Hatch out the chicks from February 1 to April 1, from which to grow your hens. Keep them as long as they fill the egg basket full. If our city cousins can make a profit on a flock of hens kept in a backyard and fed on high-priced grain bought in the market, we farmers ought to be able to make "two" profits out on our broad acres, with plenty of grass and "grasshoppers" and home-grown grain of so many kinds.

Now, I haven't said much, but I have tried to say it straight from the shoulders with twenty-three years' experience. Let me say it again, and if you will read between the lines you will see the "goal." Keep a strain of layers of a heavy egg-producing breed. Feed plenty of a large variety of home-grown grain. Keep home-grown green feed before them every week in the year. Keep the quarters all clean and tidy, supply our customers with fresh eggs, and bank the money.

W. A. ELLIS.

QUALITY IN GREEN FOOD.

In feeding hens green food in winter, it should be remembered that there is such a thing as quality even in green food. If a variety of green foods are available, the one containing the highest protein content should be chosen. Many of the foods recommended, turnips, mangels, and in fact, nearly all tubers, contain 90 per cent or more of water. While tubers serve the purpose of keeping the fowl's digestive organs in good order, the



amount of nutrition derived from them is small.

Two years ago, the writer experimented some along this line. A pen of Plymouth Rocks was supplied all the turnips they would eat. Another pen of the same breed, was fed cut clover, a pound of cut clover being included in each ten pounds of dry mash. The pen receiving the clover laid well all winter. The pen receiving the turnips laid less than a dozen eggs during the months of December and January. The reason for this is not hard to explain. The clover, while supplying all the elements of green food, is rich in protein, and is a food as well as a digestive regulator. Where other green foods are to be had, tubers should not be used.

The best green food is that supplied by a growing field of wheat or rye. An acre of growing wheat or rye will supply the needs of four or five hundred hens, and keep them keyed to the highest laying pitch.—T. Z. R.

HATCHING WITH HENS.

The best results in natural hatching will be obtained when the hens are set on the ground. Repeated experiments have demonstrated that where hens were set in this way stronger, bigger chicks were hatched than from those set in nests off the ground. If it is not convenient to build outdoor nesting coops, or there is no shed available with a dirt floor and the hens have to be set in nests with wooden bottoms, writes J. E. Dougherty, in a recent bulletin of the California experiment station, cut a square of fresh sod and lay it in the bottom of the nest box just before the eggs are put in. Then put on top just sufficient straw to hold the eggs in the center.

The setting hen coop shown herewith is a very simple and convenient one in which to care for Biddy and her brood. The reader will observe that there is a removable partition in the rear of the coop. This partition is left in at first, so two hens can be set at a time. The coop has no bottom, but is set out in the field on the ground. When setting the hens, a square of sod is placed in each nesting compartment, so as to raise the eggs above the ground level, and the straw nest is made upon the sod.

The hens should be allowed to sit on china eggs for a few days before giving them good eggs, in order to let them get used to the coop, and also to see if they are really in earnest about wishing to sit. Just before putting the good eggs under them, the hens should be dusted with an effective lice powder, and a little of the powder sprinkled over the nest.

As soon as the two hens have brought off their chicks, the egg shells and old nesting materials should be cleaned out, the partition removed and all the chicks given to one hen. The other hen can then be reset with another in a similar coop and allowed to keep her second brood.

CARE OF EGGS IN INCUBATORS.

Begin turning eggs in an incubator after 24 hours and turn morning and night until the 19th day, writes J. E. Dougherty in a recent California experiment station bulletin. Make the turning periods as near 12 hours apart as possible. Turn for the last time the morning of the 19th day if the eggs are not pipped, otherwise do not turn on the 19th day, but leave the machine closed, and do not disturb until after hatch is finished. See

the diagram of development of the embryo on the next page. In turning roll the eggs slowly with the palms of the hands. All that is required is that the egg be shifted around a little, so the embryo will not stick to the shell. The purpose of rolling is to air the eggs thoroughly and strengthen the embryos. It corresponds to the opening of the windows by the housewife and airing the bedroom each morning. The incubator door should not be left open while cooling.

In setting the eggs out to cool, do not allow part of the tray to project beyond the table or the incubator, or the eggs will cool unevenly and those in the projecting part of the tray will become chilled by the time the others are ready to go back into the machine. Begin the cooling the seventh day and cool every evening when the eggs are turned. Cool a little at first and gradually lengthen the cooling period as the hatch advances. A satisfactory way to tell when the eggs are cooled sufficiently is to hold the small ends of a few against the eyelid. When they feel barely warm the eggs are cooled enough. In mild and warm weather, 20 to 30 minutes is often required to cool eggs that have been 14 to 18 days in the incubator.

Testing.

Test on the seventh and the 14th days, at night, because that is the time the cooling is done. The first test will remove all infertile and dead germs up to that period. Every egg in which a dark, movable black spot little larger than a pinhead, with numerous radiating blood vessels, is not distinctly visible, should be discarded as worthless. Strong eggs only will hatch vigorous chicks. On the 14th day the strong eggs will be opaque and nearly black, and if held still before the tester, the embryo can be seen to move. Dead germs at this time contain either blood rings, blood streaks, or are perfectly translucent and cloudy.

DAY OLD CHICKS OR HATCHING EGGS.

The American Poultry Association at its last meeting had a heated discussion concerning the day-old chick business. An effort was made to condemn it because it was claimed the chicks may suffer when shipped long distances, and because inferior stock may be foisted upon the public. If the former were the case, how account for the splendid success with chicks so shipped? As to cheating the public, does the business offer more, or even as much, opportunity as the hatching egg business? Abuses certainly do exist, but this is not more characteristic of the day-old chick business than of any other line of business.

Unquestionably the business has affected the small size incubator industry, because sectional incubators can be operated more economically than can a large number of smaller machines which total the same capacity. But this is no argument against either the day-old chick or the small incubator. Both meet a need. Since the advent of the sectional incubator many people prefer to pay the comparatively high prices of day-old chicks than to hatch only one to three or, perhaps, four broods in a small machine. The small machine, however, is a necessity where one cannot depend upon getting day-old chicks just when one wants them or of some special breed or strain.

Neither the sectional incubator manufacturers, nor the users of such machines for custom hatching complain of dull business. This is doubtless because the business is not yet overdone. Probably the time will come when an approximate balance will be struck between supply and demand, and the whole poultry hatching trade will be more nicely adjusted than at present. What folly, then, for any association to attempt to lay down the law as to the day-old chick business, and incidentally the incubator, the hatching egg and the breeding stock lines of poultry raising. As

well order the tides to stop flowing and ebbing! The fact is that a higher law than any body of men can formulate governs the whole thing. People will buy small or large incubators, day-old chicks, hatching eggs or breeding stock as they please and secure splendid satisfaction with each—provided the men with whom they deal are upright and give value for value received.

ABERDEEN-ANGUS BREEDERS' ASSOCIATION.

To the Members of the American Aberdeen-Angus Breeders' Association:

Every member of the American Aberdeen-Angus Breeders' Association should be interested enough in the business transacted at the annual meeting and by the board of directors to read the enclosed copy of the proceedings.

All breeders of Aberdeen-Angus cattle should feel encouraged by the achievements of the breed at the leading shows of America, especially the unparalleled victories at International Live Stock Exposition, Chicago.

Since the International the trade has been exceptionally good among the breeders. A true index of this is borne out by the fact that breeders have sent in about 100 per cent more business during the past two months than was received at the office of the Association during the same period a year ago. In addition to this phenomenal increase in business favorable reports from breeders in all sections of the country are being daily received stating that "Trade is splendid and prices good." The trade is much better than the most optimistic expected and every indication points toward trade at much higher prices for many future years.

Now is the time for breeders to do the very best possible with their herds because it will mean splendid profits.

With this bright future in view, we urge every Aberdeen-Angus breeder to keep his cattle registered and his records in good shape. Breeders who have animals to record should send in applications for same at once.

Herd Books: Large editions of volumes 17, 18, 19, 20, 21, and 22 are still on hand, which should be in the hands of members. To members we quote any volume at \$1.00, express or postage prepaid, which is just half the actual cost per volume to the Association. Many members have not sent for volume 22, the last edition which recently came from the press. Only a small edition of volume 22 was printed; thus members who expect to receive a copy should send in at once for same because the supply will soon be exhausted.

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CREAM of the DAIRY NEWS

GETTING THE MOST FROM A COW.

"One bag of grain is worth at least two afterwards," says N. E. Newman, manager of a big dairy herd. Milk in the neighboring city retails at seven cents per quart, which means that the dairy business of that section is right down to a basis of the survival of the fittest. The fact that Mr. Newman has traveled for nearly a decade in this swift company indicates that his judgment is at least fairly good.

Through careful observation of a great number of cows, Mr. Newman has come to the conclusion that the generally accepted theory that a cow can be fed heavily and "milked out" in two or three years, is all nonsense. Any injury from injudicious feeding has its full effect almost immediately, but a cow properly fed keeps on developing and increasing her productive capacity, until long past the age that most dairymen set as the profitable limit. The essential feature of Mr. Newman's system is the heavy feeding of grain while the cow is dry prior to calving. Heifers get eight pounds of grain daily for three or four months prior to calving, while the mature cow keeps her grain ration with practically no interruption throughout the year. This, to be sure, gets the cows rather fat and induces milk fever at times, but with the sterilized air treatment. Mr. Newman makes short work of the cure and has not lost a cow in the past six years.

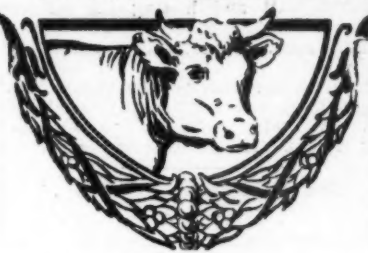
The theory back of this practice is that during the latter part of the period of gestation the cow's system is in sort of plastic condition, and responds freely to what might be called a surplus of feed. Then when the nutriment is no longer taken direct by the foetus, it all goes into the production of milk. Mr. Newman plans to have his cows go dry from two to three months, claiming that he can get practically the same annual production of milk thereby, a better calf, and save the labor of milking for several weeks besides.

Selling whole milk at retail Mr. Newman buys more cows than he raises. When he finds the indications of inherited capacity for dairy work, he cares very little for the cow's record as a producer. What she has done usually bears little relation to her record for the future. As a typical specimen Mr. Newman points out a grade Ayrshire whose best record had been 14 quarts per day when fresh up to six years old. In two periods under his management she jumped to 27 quarts. Another grade Ayrshire he purchased when eleven years old, has freshened regularly five times, and in the twelve months of her sixteenth year gave over 11,000 pounds of milk, and produced a fine heifer calf. The pure bred Paris Alpha gave 14 quarts daily with her first calf. In her subsequent periods her record has steadily risen to 18, 22, 25 and finally 28 quarts. More than half of the mature cows in the herd of forty-four have records equally good.

Market quotations are the dominant factor in determining his grain ration, but last summer Mr. Newman was feeding his herd a mixture made up of 200 pounds of dried beet pulp, 100 pounds cottonseed meal, 100 pounds of gluten and 100 pounds of corn meal. One pound of this mixture is fed for each three pounds of milk given, and each cow has a bushel of silage and all the dry hay she will eat in addition. Mr. Newman finds lots of fault with the retail price of milk in Bangor, but shows no inclination to get out of the dairy business.—John E. Taylor.

HOOD FARM NOTES.

The past fourteen months have shown more forcibly than ever the repotent qualities of Sophie's Tormentor; forty granddaughters of this bull have completed yearly authenti-



ated tests. Their average at commencement of test was three years three months; average production, 9,034 lbs., 5 ozs. milk; 563 lbs., 9 ozs. butter. The lowest record was made by a heifer, two years one month of age at commencement of test. She gave in the year 5,220 lbs. 7 oz. milk, 299 lbs., 10 ozs. butter. The largest record was made by an eight-year-old cow, she giving 17,557 lbs., 12 oz. milk, 1,175 lbs., 7 ozs. butter. The largest milk record was 18,661 lbs. 7 oz. milk. Eight cows, five years and over, produced yearly records averaging 14,292 lbs., 15 ozs. milk, 845 lbs., 1 oz. butter.

From indications now the next fourteen months will see these averages increased and a new record hung up in several of the different classes.

MILKING MACHINE SATISFACTORY.

I am a general farmer and keep from ten to fifteen cows in connection with my other farm work. I found much trouble in keeping hired help. I could hire good men but in a short time they would become tired of milking and would move away and I would have to hunt another one. Sometimes this would happen when I did not have time to milk so many cows and keep my other work going; especially if it happened to be wheat thrashing or silo filling time. Thus being left by myself so much of the time I bought a milking machine. I have used it about two years, and I have the same man with me now that I had when I installed the milker. This man is a good all-around hand, but a very slow milker and cannot milk more than five or six cows without his hands cramping. So you see he could not have stayed with me if I had not bought the milker.

My milking machine consists of two units or milkers; each milker milking one cow at a time. Thus, I milk two cows at a time. If I had a larger herd I could put in as many milkers as I could handle well. One man can handle three of these milkers and some men even use four or five. But considering my small herd, I think I have all the equipment that I need. I also prefer to have a milker for each cow instead of milking two cows with one milker, because you know then just what each cow is giving and also when one cow is through milking you do not have to wait until the other cow is through before you can start on another cow.

I think that where a man milks ten or more cows and has to depend on hired help to help do it, it would be advisable to install a milking outfit. The entire equipment for milking from 10 to 15 cows may be installed in most barns for \$160 or less. This price includes a 1½ horse power gasoline engine. If the herd is larger it can be installed for a price in proportion to the increased size of herd. If one is so situated so he can have an electric motor, I think it would be a more satisfactory power. Your power is all right you will have no trouble with the milker. My only trouble has been with my gasoline engine.

I find my cows stand better when the milker is used than when milked by hand. About half of my herd are the offspring of one cow, and it seems to be a family trait for them to keep stepping about when being milked by hand. I find they stand as good as any cow could for the milker but when we go to strip them the stepping begins.

The milker, which I use, can not injure the cow in any way; the suction

is not great enough. Yet it will milk the hardest milkers and milk them quicker than can be done by hand. I strip my cows by hand after the milker is used. Most of them do not need to be but on some cows which give more milk out of one quarter than the others it is best to strip them and by stripping after the machine, I know all the milk is out of the udder.

I have seen over a hundred cows milked with a machine, three of my neighbors having milkers, and I have never seen a cow yet but what the method was successful. I find that at the first milking often the cow will not stand well and if she does will not give her milk down; but generally the second time and not later than the third she stands all right. Here on my farm one of us does the milking while the other one is doing the other chores. When our engine refuses to run and we have to milk by hand, the two of us can not milk as quickly as one man does with the two milker outfits. My repairs have cost me about \$1 for new mouth-piece rubbers in the two years I have used my milker and sore teats do not worry us any more.—W. B. Butler.

DAIRY NOTES.

Uniform treatment insures uniform product.

No cow likes to eat the remnant left from a former meal.

If it is butter you want you want a butter machine to make it with.

A good dairy cow is one that will produce milk and butter at a fair profit.

The dairy cow must be bred for a specific purpose as she is a specific animal.

Breed tells but it must go hand in hand with intelligent feeding to give the best results.

The farmer who takes up dairying must study the question of economic production.

As a rule the butter maker who keeps closest to market demands is the one who best succeeds.

Usually the feeding of succulent foods like ensilage and roots improves the churnability of cream.

If you are after a good dairy animal do not place much stress on having a good beef animal, too.

The purity and high breeding of an animal determines its power to transmit its good qualities to its offspring.

The most comfortable and economical cow stable is the one that combines small space, warmth and light.

Everything which tends to keep a cow in a contented state is a gain both in the milk and its richness in butter fat.

Salting butter in the churn without the aid of the butterworker and packing directly therefrom saves time and labor.

Nothing will taint milk quicker than a fruit vessel and it does not take long for the half washed vessel to become foul.

THE FOOD VALUE OF FISH AFTER COLD STORAGE.

The need of some safe, efficient and hygienic method of preserving food materials for human consumption is being more forcibly brought home to American purchasers and producers every year. The value of desiccation has limitations, such as the alteration of flavor and the relative expense. Sterilization by heat is applied in many cases with success. The use of chemical preservatives has received a wholesome check through legislation. Much careful consideration has been directed to the possibilities and the limitations of cold storage as a mode of food preservation, from both the hygienic and the economic point of view. Although the preservative effect of low temperatures on food-stuffs has long been known, the study of the chemical changes which the products may undergo during prolonged refrigeration has not been vigorously prosecuted until a compara-

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tively recent date. In this work the Federal Bureau of Chemistry has been particularly active, and numerous statistics have been published in regard to the effect on meats, poultry, eggs, butter, etc., of cold storage. There are, however, few data available, in regard to the effect of cold storage on fish, although this method of preservation has been longer used for fish than for many other food products. The importance of information on this point is evident, as fish are specially susceptible to decomposition. A plant for the freezing of fish by means of salt and ice was established in New York City as early as 1861. The frozen-fish industry in America had its real beginning in the early nineties, but progressed very slowly because of the long-maintained prejudice against cold-stored products and frozen fish in particular. The development of the ammonia process for the production of low temperatures has been one of the chief factors in fostering the cold storage industry. At present, many varieties of fish are refrigerated. Each firm has its own method of freezing fish, but the general practice seems to be to freeze the fish, dip them in water and re-freeze in order that they may be completely encased in ice. They are then stored at a temperature of -16 C. (3.2 F.). The coating of ice which is renewed as occasion requires, prevents loss of water due to surface evaporation.

An investigation conducted in the Biochemical Laboratory of Columbia University at the College of Physicians and Surgeons, New York City, shows that there is no depreciation in the nutritive value, or any change in the sanitary character, of the fish during two years of cold storage. Convincing as these studies are of the excellent possibilities of preserving fresh fish by the freezing process, they must not be allowed to disguise the fact, says the Journal of the American Medical Association, that they do not give a clean bill of health to animal tissues removed from cold storage and exposed until solid or even kept iced in a common refrigerator. Neither can spoiled food be adequately preserved by any method. It is unfortunate that the efficiency of useful processes is sometimes impugned by unjustifiable applications of it. This has been true of cold storage.

INTERESTED IN BETTER CATTLE.

There seems to be a general tendency to better cattle quality. Everybody is talking "better cattle, better bulls," until the common tail end of the ordinary herds are not in demand. This is the best possible evidence of a general cattle quality improvement throughout the country. When scrubs and culls are not wanted at any price for breeding purposes, there is hope of better cattle and more cattle. As long as the farmer is satisfied with any kind of an old cow, there is not much evidence of cattle improvement, says Twentieth Century Farmer.

The hope of this country, with both beef cattle and dairy cattle in competition with foreign countries, is to forge ahead in quality. The production of the best quality of beef cattle will pay when a poor quality of cattle would be produced at a loss. The same has been repeatedly illustrated in the milk cow population. The cow testing associations have proven that on some farms there are cows that have been kept year after year not paying for the feed they consumed, while others were making their owners a big profit. The intelligence of the cow owner or cattle owner is to be exercised in determining these conditions.

It is an old saying, in relation to such comparisons, "that the best is none too good." It is truly the case when applied to cattle. The cattle owners of the United States must awaken to a realization that they have competition in the matter of beef supply, that they have competition in the matter of butter supply, and in order successfully to meet these conditions they must employ better breeding; they must make their land yield larger crops, and develop the beef-yielding capacity of their cattle and the butter-fat qualities of their dairy cows. Larger yields of beef in their baby beef classes, and larger yields of milk in their dairy cow classes—this is the logical solution, and it is the only solution that is going to test out.

The spirit is now started in the people. It was plainly manifest in the demand for better cattle and better bulls that developed at the recent Denver Stock Show. Of course, this sentiment was incubating in the minds of the cattle growers long before this opportunity was offered for it to become manifest. But it was left for this occasion of a great bull display to bring it to the surface. Bulls are wanted, bulls are needed, but they must be bulls of good quality and this demand is not yet filled. The tendency is now to raise more cattle, better quality of cattle than formerly, and this means disposing of the old bull and buying a better one. This is the most sensible way of accomplishing results, and the better class of bulls will all be called into service before the completion of the breeding season of next spring and summer.

PLENTY OF PASTURE.

Editor RURAL WORLD: After the drouth we thought we would have to buy so much feed for our stock, but although we have had five snows, two in October, two in December and one in January, we have had such a mild warm winter, the grass is green ev-

erywhere and with the rye, wheat field and pasture the stock are getting so much to eat that they require but little else. Then I get to thinking how unwise, yes, how unchristian-like we were to worry so about the drouth when we know the Lord always has taken care of us and we know that he always will. Our good minister says there is no danger of any one ever starving in good old Missouri, unless we cannot swallow. Well the wild flowers have been blooming all winter we have gathered, used and sold greens from our garden also, all winter, and there is plenty now. We have—January 25th—planted a large garden of peas in rows, then sowed lettuce, kale, and radishes broadcast over the entire garden, all are hardy except the radishes, we may lose the seed of them. All will be sold and out of the way in time to set out cabbage and tomato plants. Cabbage and turnips are growing in the garden and can be used yet.

Our church has just closed a grand revival meeting and the great rally of S. W. Baptist College was an inspiration to every one.

Nettie B. Richmond.

Yearlings Make Profitable Gains.

I am quite convinced from the data that we have at hand that no steer should be exhibited in the single classes that was past the senior yearling class. This would mean that no steer could be exhibited that was more than twenty-seven months of age.

Our data not only shows that the calves made economical gains, but also that there are some methods of feeding which are more profitable than others. Corn silage seems to play a very prominent part in the reduction of the cost of gains of all classes of cattle. It proved so in this case. In feeding operations at this station, as well as others through the corn belt states, linseed meal seems to have an advantage over cottonseed meal for feeding calves, while for older cattle most results show as good if not better results by the use of cottonseed meal. A ration for calves composed of corn, old process linseed meal, clover or alfalfa hay and silage seems to be as satisfactory as any for making rapid as well as economical gains on calves. At the Illinois station last year the addition of oats to the ration of corn and alfalfa seemed to increase the cost of gains. There is no doubt but what oats might play a very important part in the proper growth and development of young cattle for breeding purposes.

SPRAINS.

Sprains of the back tendons, fetlock joints, and the hock are mishaps which for the greater part it would not have been easy or possible to prevent, for, although in most cases the result of over-straining the part involved, and they would not perhaps have arisen if the horse had been used with greater care, there remains the fact that a certain amount of risk of sprain is practically unavoidable whenever horses are called upon for more than average efforts or exertion, such as jumping, fast galloping, hauling a very heavy load uphill, etc.

In order to preclude such risk entirely, one would have to use horses so carefully and be so particular about not putting any strain on the legs and joints, that it would be impossible to make full use of them, while all galloping and jumping would have to be abstained from. However, the likelihood of sprains occurring is greater in certain circumstances than it normally is, and their occurrence is entirely attributable to causes that could easily be avoided. For example, sprains and injuries to the hocks are most liable to result if horses are galloped or jumped much when they are in soft or green condition, or through galloping or cantering a horse on hard ground.

In the case of farm horses, their hocks often get badly injured and become unsound through making them back an excessively heavy load, which puts an inordinate strain upon these joints, and such cases would, of course, not happen if it were not for carelessness or ignorance.

Negligence, again, is not infrequent-

ly the underlying cause of capped hocks, this trouble in some cases being brought about as the result of a horse being made to turn round in a narrow stall and hitting the points of its hocks against the stall partitions, which, if constantly repeated, is very liable to lead to their getting capped in the end. This result can easily be guarded against by backing the horse out of its stall and turning it round in the stable passage.

THE CLYDESDALE HORSE.

The representatives of this breed of Scotch draft horses are usually bay, brown, black or chestnut in color, with white markings. In confirmation, the leading characteristics sought are the possession of weight with quality and action.

While the adherents of the breed recognize the value of weight yet they always associate with it quality of structure with superior mechanical action, and in judging a class of horses of this breed these features should have equal prominence. The head in the typical Clydesdale, though sometimes out of proportion to the other parts, is usually possessed of intelligent features. To secure the action desired the shoulders must be sloping so as to permit a free and long stride in the walk and trot; the arm must necessarily be full muscled, legs fluted and flat with a fine feather springing from the edge. The pasterns, which have received much attention in the formation of this breed, should be decidedly sloping, the hoof head of top of the foot should be large, and no amount of fine feather or excellence of pastern should be allowed to overbalance the necessity of a good sized foot, correctly shaped and of splendid wearing texture. The back should be short, and though seemingly low from the extra style secured by high carriage of.

In no case should style be allowed to supplant essential draft qualities, as it would be a fault of judgment to permit high carriage and flashy action to attain prominence over a deep middle, strong head, should never be weak, which is prevented by shortness in this part, and with an easy rising and full coupled loin running smoothly into a strong croup. The quarters should be well muscled, and the hind legs, in addition to having every evidence of quality, should be properly set, meaning thereby that they stand close and the parts have correct proportion by relation to each other.

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Our feather beds are made to weigh 36-lbs., all new sanitary feathers with best ticking, equipped with sanitary ventilators. We guarantee safe delivery and also guarantee to refund full purchase price if you do not like the bed and pillows after trying them 10 days. Send us \$10 and we will send you the feather bed and the pair of 6-lb. pillows.

We prepay the freight. You can act as our agent and make big money. Send us your order today. Turner & Cornwell, Dept. 127, MEMPHIS, TENN. or Dept. 127, CHARLOTTE, N.C.



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Write for literature and particulars as to reduced railway rates to Superintendent of Immigration, Ottawa, Canada, or to Canadian Government Agent.

Geo. A. Cook, 125 W. 9th St., Kansas City, Mo.
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160 ACRE FARM IN WESTERN CANADA FREE

A FARMER'S FRIEND.

The toad is one of the farmer's best friends. He hides during the heat of the day under stones, sticks or any kind of rubbish he can find that will afford shade and moisture but as soon as the day grows cool he sallies forth in quest of food, which consists principally of insects.

It is a common superstition that to kill a toad will cause the cows of the offender to give bloody milk, which, though without foundation in fact, is productive of good by deterring the slaughter of the innocents by cruel boys.

Like many others of the animal kingdom the toad sloughs his skin, but you never can find their cast skins around as you do those of snakes. Only once have I been permitted to see a toad change his raiment. I saw one in a shady place beneath a large clod. He acted as though he were in severe pain. Presently I saw the skin on his back beginning to split. The opening grew larger and larger, till at last he worked it forward and off his hind legs, for all the world like a boy taking off his trousers. Next he worked it off his front legs and with his feet he pushed it off his head, rolled it up into a ball and—what do you think! He swallowed the pellet as though it were a delicate morsel.

Formerly they were thought to be venomous, but the idea is absolutely without foundation. His body is covered with wart-like protuberances which on pressure exude a milky liquid of a very acrid taste. Many a time have I seen dogs play with toads, but observed that they were careful not to get the little creatures in their mouths. No doubt they had learned the toad's weapon by experience.

Though he appears to be a clumsy fellow, often have I watched him before my team and he always so timed and spaced his leaps as to escape death by hoofs and wheels. Still he is not active enough to spring upon insects. How does he catch them? His tongue, which is an inch or more long, is attached to the front of his mouth and free behind. When a fly comes near enough the tongue is thrust quickly out, the fly is enveloped and drawn back into the mouth so quickly that the eye cannot follow the movements.

Toads are local in their habits, as are in fact many animals thought to be wanderers. The toad you saw hopping around your yard last summer is the one which will appear next summer and has been doing police duty in your yard and garden for several years.

The number of insects a toad will consume is almost incredible to one who has not observed their habits, and as he is not particularly choice in his selection of food, he destroys vast numbers of injurious insects. His utility as an insecticide is so well known that in some places he has a market value for placing in gardens.

The toad exhibits a considerable degree of intelligence and is easily tamed. I knew of three toads that had been tamed by some children. After having been carried into the house a few evenings they became so tame that they would hop up on the porch and wait for the door to be opened, then they would calmly hop into the kitchen and watch for flies. They became so tame that the children could catch them anywhere in the yard and carry them round without them making any effort to escape. Each succeeding summer three toads applied for the job and we supposed them to be the original ones.—J. H. N.

PLENTY OF NITRATES IN CHILL.

Editor of Colman's Rural World:

So many sensational statements have been made of late which would lead one to suppose that the exhaustion of the supplies of Chilian nitrate is imminent, that I am asking you to help dissipate the prevailing opinion that very little nitrate of soda is now left in Chilli for fertilizer or other purposes.

First of all, there is a vast amount of unsurveyed nitrate ground on the

Chilian pampas that is, nevertheless, known to contain immense quantities of nitrate of soda.

Second, grounds already surveyed still contain enormous quantities of nitrate. There are probably, in round numbers, one billion tons of nitrate in the deposits of Chilli, and, without doubt, large supplies also exist on lands now but incompletely prospected. The surveyed and certified tonnage opened up at the present time ready for extracting is fully 250,000,000 tons.

The probable life of the surveyed deposits is upwards of 200 years, even allowing for a steadily increasing annual rate of consumption.

Moreover, there remains the interesting question as to whether by the end of the ensuing century we may not find that nature shall have by that time manufactured an immense additional amount of Chilian nitrate for the uses of the world.

Sir William Crookes' prophecy that the world would starve for lack of bread as soon as the Chilian nitrate supplies were exhausted has for some years led the chemical public to believe that a wheat famine was in sight, but that time is so far distant that no one living today need have misgivings on the subject.

Very truly yours,

WILLIAM S. MYERS.

Official Delegate for the Chilean Government for the Eighth International Congress of Applied Chemistry.

Weekly Market Report

Cattle and Hogs Higher—Moderate Offerings Quickly Taken At Upturn—Hogs Fairly Active.

CATTLE—The demand for beef steers was quite fair and by reason of the fact that only a small supply was available, sellers were able to be far more independent. As the bulk of the steers was of medium to good grade and nothing extremely weighty on hand, there was little for buyers to be discriminatory about and practically the entire showing enjoyed a good, strong call. The market was active as long as the offering held out and by noon most of the offerings had been picked over. Medium grade killing steers showed the least change, but most of the steers were a good dime higher and in places a 15c advance was evident. A bunch of Kansas steers sold for \$7.45@8.25 and native Mississippi and Tennessee steers \$7 and \$7.85, respectively. By lack of quality no high top was registered.

Prime quality of heifers was lacking and there was only a handful of choice grades of heifers included in the showing. Market was inclined to be rather uneven, but generally, while the movement was just a slight bit better than last week, prices were on stronger basis. Not much difficulty was encountered in disposing of heifers, but still buyers were none too anxious to acquire them. The feeling, however, was much better and sellers in a few places claimed slight advances. The best kinds enjoyed the best market.

A right fair offering of cows was received and there was a strong demand for them. Market was uneven, but the bulk of the medium to good grades of cows moved at a 10@15c advance over last week's close and extremes showed even a larger advance. Bulls were in small supply and were in good request. Bulk of the medium to heavy weights of good grade sold 10@15c higher.

HOGS—The week opened with a liberal supply, but there was also a right good demand and prices were on a 5c higher basis than the close of last week, and, like for several weeks past, a full dime higher than the Chicago market or any other Western market. Toward noon, when shippers and butchers were about ready to quit, the market weakened and from then to the close prices were 5@10c under the early ones.

Several loads, some 6 or 8, went at \$9.90, which was the top of the mar-

ket, while the bulk of the good hogs sold at \$8.70@8.80. The top in Chicago was but \$8.80 and a great proportion of the hogs here sold above this price. It was the strong shipping demand that held prices up, as packers were bearish and butchers paid the high prices simply because they were compelled to do so.

Hogs around 200 pounds and heavier, that were good found ready sale at \$8.80 and up, and a lot more than was offered would have brought the same prices, as none of the buyers secured as many hogs as they wanted. City butchers and shippers were strong after the good hogs, but the plain grades had to go to packers, and therefore did not find things so nice; as the packers were hard to trade with.

SHEEP—A small supply of sheep and the offerings were principally Western lambs and yearlings fed in local territory. There was also a string of Missouri-fed Mexican lambs on the market. The market was active, with prices on a slightly better basis and as high as they have been for several weeks. No sheep worthy of mention were received and no native lambs.

The Mexican lambs consisted of a string of 547 head that averaged 72 pounds, and they sold at \$7.95, which was the top of the market. These lambs were fed in Carroll County, Mo., and were strictly good quality and well fattened. The Western lambs weighed from 77 to 90 pounds and sold at \$7.90, or but a nickel under the top of the market. Some light Western lambs, 61 pounds average, sold at \$7.80.

"A Pueblo bum fell downstairs the other night with twenty glasses of beer and never spilled a drop." "How did he ever do it?" "Just kept his mouth closed."

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Here's a bargain. Never before has it been possible to obtain a Multi-focal telescope with solar eyepiece attachment for less than \$5 to \$10. But because we have made special arrangements with the inventor, and have them made in tremendous quantities by a large manufacturer in Europe with cheap labor, we are enabled to give you this telescope, provided you will send us \$1.00 to pay for a one year, new or renewal subscription to COLMAN'S RURAL WORLD and 25 cents extra to help pay mailing and packing charges on the telescope outfit (total \$1.25). Think of it—the solar eye-piece alone is worth more than that amount in the pleasure it gives—seeing the sun spots as they appear, and inspecting solar eclipses.

The Excelsior Multi-focal Telescope is never dimmed—each day discovers something new and different. Faces blocks away. Read signs invisible to the naked eye. Use it in cases of emergency.

Take the Excelsior Multi-focal Telescope with you on pleasure and vacation trips, and you can take in all the scenery at a glance—ships miles out; mountains, encircled by vapors; bathers in the surf; tourists climbing up the winding paths.

Used as a microscope it is found of infinite value in discovering microbes and germs in plants and seeds, etc. The Excelsior Multi-focal Telescope is mechanically correct—brass-bound, brass safety cap to exclude dust. Powerful lenses, scientifically ground and polished. H to carry—will go in pocket when closed, but when opened is over 3½ feet long. Circumference, 6½ inches. Heretofore telescopes of this size, with solar eyepiece and multi-focal lenses, have sold for \$5 to \$10, or even more. We do not claim our telescope is as nice and expensive in every particular of construction as a \$10 telescope should be; that would be unreasonable; but it is a positive wonder for the price. Each telescope is provided with 2 interchangeable objective lenses—one for ordinary range and hazy atmosphere, the other for extra long range in clear atmosphere, increasing the power and utility of Telescope about 50 per cent.

COULD COUNT CATTLE NEARLY 20 MILES AWAY. F. S. Patton, Arkansas City, Kansas, writes: "Can count cattle nearly 20 miles; can see large ranch 17 miles east, and can tell colors and count windows in house."

SAW AN ECLIPSE OF SUN. L. S. Henry, The Saxon, New York, writes: "Your solar eyepiece is a great thing. I witnessed the eclipse at the Austrian Tyrol when the sun was almost 50 per cent concealed."

COULD SEE SUN SPOTS. Rutland, Vt., Feb. 18, 1910.—Telescope arrived O. K. I have seen the spots on the sun for the first time in my life.—Dan C. Safford.



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LADIES, send us your name and address, plainly written, and we will mail you postpaid, on credit 16 Boxes Healing and Complexion Cream today, (one of a kind friends at 25 cents a box). When sold remit us the four dollars, and we will promptly send you for your trouble Eight (four pair) Nottingham Lace Curtains, nearly three yards long. Ladies, write us at once for the 16 boxes of Cream.

CHAS. B. THOMPSON
PREMIUM DEPT. '10
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Cultivate vegetables and flowers when the weather is hot and the soil dry.



Horticulture

FIGHT THE BLIGHT.

Blight was bad last year in Missouri. Many an orchardist knows this to his cost. It is likely to be bad again this year, says the State Fruit Experiment Station at Mountain Grove, Mo., if no work is done in the orchards before the coming growing season.

If you are one of the many whose trees suffered from the blight last year, you should get out into your orchard as soon as possible—get your neighbors out too—to look for signs of the disease. They will not be hard to find. Wherever the blight bacteria have been at work they leave a trail of dead fruit spurs with dead blossoms, or fruit, or leaves, still hanging to them; dead spots in the bark around the base of dead fruit spurs or water sprouts; and dead areas even in the bark of large limbs and the main trunk.

And when you find these signs of blight, hunt up the pruning knife and the saw. Get all your neighbors to do the same thing. One badly blighted orchard in a community, not cleaned up, can furnish infection enough—carried by bees or other insects—to cause trouble in all the others that have been cleaned up.

But when you are ready to go to work, don't waste time and money on cutting out the numberless blighted fruit spurs. There are no living germs in them, or, at least, only a very few, careful investigation in various parts of the country has shown that they have little to do with spreading infection in the spring.

The principal use for the pruning tools is on water sprouts and on limbs from 1/4 of an inch to 1 1/2 inches in diameter, where blight cankers have been formed at the base of a fruit spur or a water sprout. Cut out all such limbs, making the cut at least four inches below the canker. This is done to remove germs which may be alive in the green, healthy-looking bark around the canker.

It is not certain that blight can be spread from all twig and limb cankers, but it is certain that it can be spread from some of them. Pears are worse than apples in this respect, but the danger is real and serious on apples alone. So, to be on the safe side cut out all of the limb cankers.

Scrape out and cut out blight cankers on the trunk and large limbs, clear down to the sound wood and out three or four inches into the seemingly healthy bark around them. Take care of course not to girdle the tree. If that should seem necessary, to get all the canker, the tree is in such bad condition it would be benefited very little by any sort of treatment.

Cleanse all wounds made in this work with a disinfectant made by dissolving 14 one-grain tablets of mercuric chloride in one quart of water. This solution is poisonous and must be handled carefully. Dip the saw and pruning shears in the same solution after each cut is made or canker dug out or, at least, after each tree is finished. This may seem an unnecessary waste of time. It is not, however, for it prevents all possibility of carrying the disease from one limb or tree to another.

After disinfecting, paint all wounds with a mixture of pure white lead and raw linseed oil or with some one of the pruning compounds put out by paint and chemical companies.

And finally, finish the job, and finish it right, by burning all the dead and diseased material you have cut out. Not to do this would be as sensible as to leave cholera hogs where they die and trust the other hogs not to get the disease.

If you are not sure you know blight cankers, send samples for examination to the State Fruit Experiment Station, Mountain Grove, Mo. Write to the same place also for information on any other phase of fruit growing.

ORCHARD AND GARDEN NOTES.

Sunlight is a good disinfectant. The aphid can be controlled by spraying with the tobacco or kero-

sene solutions.

Trees that are making a rapid growth of wood do not generally bear much fruit.

Start a few evergreens about the garden or yard. Blue spruce and Black Hills spruce are excellent.

Do not plant many varieties of apples. A few well-chosen trees well cared for are more satisfactory than many only half cared for.

A fall garden will prove profitable. Such crops as beans, beets, carrots, cabbage and mustard will make a nice garden for this fall.

Train the tomatoes on trellis or on a pole like lima beans. This treatment keeps the fruit on the ground and brings the fruit earlier.

Do not set strawberries too deep. The roots should be well spread out and the plants set no deeper than it originally grew in the field.

Don't cut the asparagus after the middle of June. Give the beds a good cultivating and keep the weeds out of it for the rest of the season.

Rhubarb roots dug last autumn may be put in the cellar now and forced. The shoots from these are very acceptable at this time of year.

Young plants in the garden should be protected from cucumber beetles and squash bugs by light screens. Bordeaux Paris green is also good for them.

Currants, gooseberries, shrubbery and ornamentals around the home, in the garden, should be sprayed and thus given a chance to do their best for those who grow them.

Wheat and oats are not good crops to grow in an orchard, as they remove the very elements from the soil that are most required by the growing trees, to grow good crops and fruit.

In planting fruit trees don't make the common mistake of putting fertilizer in the hole where it will come in contact with the roots. Acres of young trees have been lost in this way.

Prune and trim the peach tree for low heads. If possible have the lower branches not over fifteen or twenty inches from the ground. This gives protection to the trunk and makes picking easy.

Rose beetles appear in June and are very stubborn customers, especially in sandy localities. It is difficult to poison them. Better shield the choicest bushes with mosquito netting. Spray rose bugs with arsenate of lead—one pound to ten gallons of water; for mildew and black spots use potassium sulphide.

It is said that tissue paper stuffed in holes will keep out the mice as they will not gnaw through. Better to get traps and get rid of the mice.

If the nation's crop of apples continues to decrease as it has for the past 16 or 17 years Uncle Sam will eventually go hungry for apples according to a speaker at the Purdue farmers' short course. The marketable crop of apples in 1896 was about 69,000,000 barrels. In 1913, the crop was something like 26,000,000 barrels. In Indiana, in 1900, the production was nearly 8,000,000 barrels. In 1910, this was reduced to less than a million barrels. Thousands of new trees have been set out but the orchards are not properly cared for.

TREATMENT OF SEED OATS FOR SMUT.

By C. B. Hutchison.

Loose smut of oats is a fungous disease of the oat plant which causes serious losses to this crop. This disease is very noticeable after the plants begin to head, the flowers of infected plants being almost completely replaced by a mass of fine, black, dusty spores.

Oat smut may be prevented by soaking or sprinkling the seed thoroughly with some solution which will kill the spores without injuring the seed. The most common solution used is formalin and the treatment is made as follows:

Mix one pint of commercial formalin with 40 or 50 gallons of water in barrels or other convenient vessels. Immerse the oats in this solution, stirring well so that all will be thoroughly soaked. Pour off the solution, dump the oats out and stir occasionally until dry. Another method employed is to sprinkle the oats with the solution until they are

well soaked, and then heap them up in a pile and cover with blankets or sacks. Leave them in this pile for five or six hours, or even over night, and then spread out to dry. Stir frequently until thoroughly dried, after which they may be sacked and set aside until seeding time. Formalin may be obtained from any drug store.

Machines for treating oats and wheat for smut are on the market. In these the grain is passed through a tank containing the formalin solution and then dumped out on the floor to dry. Such machines are not expensive and are very satisfactory.

Formalin is poisonous, but in this weak solution it will not injure the hands and is perfectly safe to handle. Since the formalin volatilizes rapidly, oats thus treated that are not needed for seeding may, after thorough drying and airing, be safely fed to stock.

PLANNING THE GARDEN.

With the approach of spring those persons who are expecting to grow a garden can well afford to spend some time in planning it, says R. B. Cruickshank of the College of Agriculture, Ohio State University. Almost every farm has a garden and it is profitable to make it go as far as possible in supplying the needs of the table by growing a variety of vegetables. The gardener should draw a plan of his garden, outlining the season's planting. Consideration should be given the kinds of vegetables, the season of planting, the length of time required for their maturity and the amounts of each. Vegetables which will be planted about the same time may be placed in the same or adjacent rows. Those which require the same sort of culture and have about the same length of growing season should also be placed together. For the grower who wishes to produce the greatest amount on a given area, companion and succession cropping may be practiced. By knowing the nature of the various vegetables, the grower can get two or three crops from the same space, either at the same time or following each other. In the first case, two are selected, one of which will mature and be removed before the other needs the space; in the second an early crop is harvested in time to sow a late one. Garden planning, if done intelligently, will mean economy of time, labor and money in the carrying out of the actual work in the spring and summer.



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Strictly pure bred. We had the best twenty ears at State Corn Show in 1913. Also best single ear in the Capper Corn Contest. We also have Alsike and Timothy Seed. We guarantee our seeds to please you. Samples mailed free.

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Keep pure, fresh water always within reach.



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Grand New Year Book

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The Most Amazing Apple
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is fully described—its glorious record of twenty years in the American orchard is accurately given. No one with room for a single tree can afford to be without this marvelous fruit. Of exquisite flavor—large, brilliant, waxy red. The book is free.

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are supplied every year direct to more American planters than are the seeds of any other grower. Do your seeds come direct from Philadelphia? If not, we should like to make your acquaintance. Simply send us your address (a postal card will do) and you will receive Burpee's Annual for 1914—a bright book of 182 pages, which has long been recognized as "The Leading American Seed Catalog." Kindly write to-day! Address

W. ATLEE BURPEE & CO., Burpee Buildings, Philadelphia

Home Circle

DOWN ON THE FARM.

(This Gem is Taken From Our Scrap Book.)

Says old man Haskins, with a frown, That there ain't much use movin' to town.

And crowdin' into a four-room flat Where there ain't nuff room to hang your hat.

Where eggs cost about a nickel apiece And butter is about like axle grease. We gotta admit there's a lot of charm In living right out on the good old farm.

When the wife and children want to go

And see a good movin' picture show, When they're shoin' a pertickler fancy reel

I kin git 'em there quick in the oat-mobile.

The town folks ain't got nothin' on us.

In spite of all their show and fuss We got plumbin' all through our place.

And fine washstands fer your hands and face.

A bathtub, too, we can fill right quick. And we don't have to go jump in the crick.

So fur as the day's news is concerned There's durned few things we haven't learned

About as sudden as one-two-three, For we've got a party phone, you see, And we are never late in gettin' our mails.

For the rural delivery never fails.

We do all the things the city folks do, Our children go to the colleges, too. And there isn't a durned new-fangled idee,

That we don't grab as quick as quick can be.

We've got all the latest in machines, We git all the high-toned magazines, We've got new thoughts in our old think tanks,

And quite a lot of dough in the city banks.

When it comes to eats, why, we have to laff,

We have got them all skinned by a mile and a half,

For "rubes" you can no longer put us down,

"Rubes" nowadays are still livin' in town.

KEEP UP THE HOME CIRCLE.

By S A Bassett.

Dear Home Circle Friends:—I was a little disappointed this week when I turned to the Home Circle page to see such few letters. I think we will have to get a different move on us or we will lose the page entirely. I think there are others that are better qualified to write than I, so I just wait for others to write. I picked up an old paper the other day and read some about the Twinklers, and I wondered where they all are. My hobby is writing of poultry, but people get tired of chicken lore. We have had a little snow and cold weather the last few days, but we can't complain as we have had such a fine, warm winter. My Barred Rocks have taken advantage of the nice weather and filled the egg basket I hear some say, "what do you feed your chickens to get so many eggs?" Our hens are like the men folks' hogs, they don't expect them to do their best laying on fat (I mean the hogs) if they half feed them when corn is scarce or high priced. Some will say I killed a hen and she was too fat to lay. I find that hens that are very fat are the ones that lay the best only in hot weather. I would like to say to the man (for I know it was a man) that asked in the Rural World a few numbers back where the women had all gone to that used to spin, weave and make all the clothes, also make a barrel of kraut and one of soap. Now, dear reader, if you will tell me where the men are that split all the rails to fence 160 acres of land with lots and cross fences and also cut their grain with the sickle and thrashed the same on the barn floor with flails I will gladly tell him

where the women are. Does he think the women are behind times and not up to date as their brothers are? How much care did the poultry get fifty years ago and how many groceries and clothes did the proceeds of the poultry buy at those times? How much fruit was canned and jells made in those old times long ago? They lived on fat meat, home-made hominy, graut, potatoes and pumpkins. It took less work in those days to prepare a meal than it does now, but would you like to go back to the food of them good old days? I know plenty of women that make enough soap each spring to last a year. But, now they don't put the ashes in a hopper and spend a week running off the lye, but get through with the job in a very few hours. I know plenty of them that can all kinds of vegetables as well as fruit; even to kraut. I, myself, would like some of the good home-made things that were made from the wool that came from the sheeps' backs, but whose fault is it, not the woman's to be sure, unless you expect her to card by hand, which is too far behind the times. My mother used to make blankets, but she never carded the wool, but had it done at the factory. Now, dear Home Circle friends, wake up and don't let other things crowd us out of our page as long as the editor is willing for us to have the page. With best wishes to all.

VEGETABLE RECIPES.

Miss Helen A. Synan.

Cauliflower Salad—Place cauliflower, head down, in cold salted water, let it stand one hour; cook in boiling water, salted, head up, 40 minutes, when tender separate, cool, cover with one cup French dressing and put on ice to chill. Arrange in a bowl with crisp lettuce leaves; serve with French dressing.

Carrot Marmalade—Four large carrots, cup sugar, one cup water, juice one lemon, a little salt; peel and grate the carrots, add juice one lemon, then add one cup sugar and water, and salt; let cool slowly until soft.

German Potato Cakes—Take one dozen raw potatoes, grate them, half cup flour, little salt, pinch pepper, one egg; stir all well; fry like pancakes in hot fat.

Tomato Pie—Peel and slice six tomatoes, to this allow four tablespoons of vinegar, little butter, three and a half tablespoons of sugar, and half grated nutmeg; very nice.

Vegetable Broth—Slice two potatoes, a carrot, a turnip, one onion; put into a quart of water, boil gently for an hour; flavor with salt and strain; add a teaspoon of catsup and serve.

Stuffed Cabbage—Cut off outside leaves of a cabbage, slice in half, scrape out middle and wash well, in salt and water; cut up one and a half pounds of tender steak, season with pepper and salt and place in hole, then tie the two stuffed halves together with a string; place some pieces of butter on top, bake in oven till tender.

Cucumber Catsup—Pare ripe cucumbers, cut them in halves and grate pulp; drain off the liquid and to each pint of solid pulp add half a pint of strong cider vinegar, one-fourth teaspoon of cayenne, one of salt, two tablespoons of grated horseradish; seal tight.

Cauliflower Sauce—Add boiled cauliflower, cut in pieces, to some butter sauce made with cream, as follows: Take quarter of a pound of butter, rub it with two teaspoons of flour, when well mixed put it into a saucepan with half a pint of thin cream, cover it and set the saucepan in a larger one full of boiling water; shake it well, completely melted and beginning to boil, season with salt and pepper.

BERRY RECIPES.

By Miss Helen A. Synan.

Blueberry Cake—One cup of milk, one cup sugar, two eggs, one tablespoon butter, one pint blueberries, two teaspoons cream of tartar, one teaspoon soda. Bake in long tin.

Blackberry Pudding—Mash one pint blackberries and turn into a pudding dish; sprinkle with one-half cup

sugar and a teaspoon of butter. Then prepare the following: Cream one tablespoon of butter with three tablespoons sugar, add one cup milk then one cup flour, sifted, with one teaspoon baking powder, and one-fourth teaspoonful salt. Beat well. Serve with a cream sauce, vanilla flavoring.

Raspberry Custard Pudding—Mash raspberries and put four tablespoons into a buttered pudding dish. Grate a quarter of a pound of bread crumbs, enough to absorb berry juice. Make a pint of custard. When it begins to thicken pour gradually over bread crumbs and berries. Bake half an hour in oven.

Blueberry Muffins—Stir well two cups of white flour, sifted, with two tablespoons sugar and one teaspoon salt, then add one cup of milk gradually, one egg well beaten, then sift in three and a half teaspoons baking powder and then three-fourths cup blackberries. Bake in buttered gem pans twenty minutes.

Favorite Red Raspberry Pudding—Make a rich sponge cake and cover with red raspberries mashed fine, with a little powdered sugar. Cover all with whipped cream. Very delicious.

JAM CAKE RECIPE.

One-half cup of butter, $\frac{1}{4}$ cup of lard, 1 cup of sugar, the yolks of 4 eggs, 1 teaspoonful each of spice, cin-

Pure Blood

Is absolutely necessary to give the health that brings happiness, a good appetite, restful sleep, and makes you eager for life's duties. HOOD'S SARSAPARILLA makes pure blood and so creates this much-desired condition.

BEAUTIOLA The Popular, Magical and Guaranteed Beautifier. The rage of the age. Accept no counterfeits. Send \$1 bill and you will receive by parcel post Beautiola and Beauty Cream, with full particulars. THE BEAUTIOLA CO., Dept. C., Beautiola Bldg., St. Louis, U. S. A.

namon and nutmeg, 1 cup of butter-milk, with 1 teaspoonful of soda dissolved in it, and 1 cup of jam. Stir in enough flour to make it like any other cake dough. For the filling use the whites of the eggs with $\frac{1}{4}$ cup of sugar in them and flavor with essence of cinnamon. Add a little more sugar to the white to put on top.

Will some one please send me the recipe for sweet potato pudding?

PATTERNS FOR RURAL WORLD READERS.



In ordering patterns for Waist, give bust measure only; for Skirts, give waist measure only; for children give age only; while for patterns for Aprons say, large, small or medium.

9655. Ladies' Skirt.

Cut in six sizes, 22, 24, 26, 28, 30 and 32 inches waist measure. It requires 3-8 yards of 44-inch material for a 24-inch size. Price 10c.

9631. Girl's Dress.

Cut in four sizes, 6, 8, 10 and 12 years. It requires 3 $\frac{1}{2}$ yards of 36-inch material for an 8-year size. Price 10c.

9647. Ladies' Night Dress.

Cut in three sizes, small, medium and large. It requires 5-1-4 yards of 36-inch material for a medium size. Price 10c.

9657. Ladies' Costume.

Cut in six sizes, 32, 34, 36, 38, 40 and 42 inches bust measure. It requires seven yards of 44-inch material for a 36-inch size. Price 10c.

9673. Girl's Dress.

Cut in four sizes, 6, 8, 10 and 12 years. It requires 4-5-8 yards of 36-inch material for a 10-year size. Price 10c.

9669. Girl's Dress.

Cut in four sizes, 2, 4, 6 and 8 years. It requires 2-5-8 yards of 40-inch material for the dress and $\frac{1}{2}$ yard of 27-inch material for the tucker for a 6-year size. Price 10c.

9492. Ladies' One-Piece Apron.

Cut in three sizes, small, medium and large. It requires four yards of 36-inch material for the medium size. Price 10c.

9652. Ladies' House Dress.

Cut in six sizes, 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 5 $\frac{1}{4}$ yards of 44-inch material for a 36-inch size. Price 10c.

These patterns will be sent to RURAL WORLD subscribers for 10 cents each (silver or stamps).

If you want more than one pattern, send 10 cents for each additional pattern desired.

Fill out this coupon and send it to COLMAN'S RURAL WORLD, 718 Lucas Ave., St. Louis, Mo.:

Pattern No.....Size.....Years

Bust.....in. Waist.....in.

Name

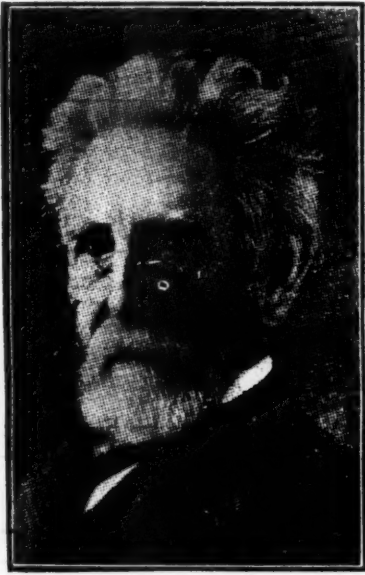
Address



Colman's Rural World

Founded by Norman J. Colman.
Published by
Colman's Rural World Publishing Co.
August Frank, President.

WILLIAM N. ELLIOTT, Editor.
C. D. LYON, Associate Editor.



Norman J. Colman,
First U. S. Secretary of Agriculture.

COLMAN'S RURAL WORLD was established in 1848 by Norman J. Colman, who later became the first United States Secretary of Agriculture. As a champion of advanced agriculture this journal has attracted nation-wide support, and is today held in highest regard by thousands of intelligent and discriminating readers.

COLMAN'S RURAL WORLD strives to bring the greatest good to the greatest number at all times. Each issue is replete with helpfulness and good cheer. It is read for profit and pleasure, and yields a satisfactory return to each individual subscriber. Our advertisers are rewarded with excellent results.

COLMAN'S RURAL WORLD is mailed post-paid to any address in the United States or island possessions for one dollar per year or three years for two dollars. All subscriptions payable in advance. Remit by draft, registered letter, postoffice or express money order. In changing address give old and new addresses.

COLMAN'S RURAL WORLD is published every Thursday at 718 Lucas Avenue. Contributed articles on pertinent subjects are invited. Address all communications to **COLMAN'S RURAL WORLD**, 718 Lucas Ave., St. Louis, Mo.

Entered in the postoffice at St. Louis, Mo., as second-class matter.

Many a good farmer keeps ahead of his neighbor by carefully reading the advertising in his farm paper.

If you have gotten along thus far without a silo make up your mind to have one next year. It is a mark of progress.

In this day no farmer could go back to hand labor, for his cost of production would be greater than his crop is worth.

Seed testing is very necessary and should be done now. See that the seed ears are vigorous germinators before the corn is drilled into good ground to rot and waste.

Take advantage of every good day to plow and prepare for the spring work. Get the manure onto the land. That's where it should be and where it will do the most good.

Better farming should be the slogan. It must be acquired by practical experience, and it means more to future generations than to yourself. Let everybody put the best foot forward and the end is accomplished.

Modern farming, like modern manufacturing, is on a highly competitive basis. We must keep up with the times to make a profit, and the man who makes the greatest profit is the man ahead of the times.

For enthusiasm and display of the "get together" spirit the annual meeting of the county farm bureaus in

Kansas are striking examples. At the meeting of the Harvey County Farm Bureau, February 11, 100 of the 116 members of the bureau were present for the all-day meeting and banquet. This bureau hired F. P. Lane as county agent June 1, 1913, and has rapidly become a powerful force for better agriculture in Harvey county. Its remarkable success the first year is attested by the fact that it was found necessary at this meeting to increase the membership limit to 150. A full day program was held, a business meeting in the morning and addresses in the afternoon. L. E. Fife was re-elected president for the ensuing year, J. C. Mack, secretary-treasurer. After addresses were made by G. C. Wheeler, associate editor of the Kansas Farmer, E. C. Johnson, state leader of farm bureau work, and Harrison E. Smith of the United States Department of Agriculture, Mr. Lane, the county agent, told of the results of the last year's work and the plans for the coming year.

THE TORRENS SYSTEM.

Under our present antiquated system, every time a piece of real estate changes hands, some lawyer must examine into the legality of the title. Old records, running back sometimes for hundreds of years, must be searched at great labor and expense; and the next time the property is sold, and the next, and the next, the same identical work must be done over again, and other big lawyers' fees paid—a system as foolish and uneconomical as paying a man to carry a brick from one side of the street to the other and back again and again interminably.

Now the Torrens system proposes that instead of this perennial investigation of the same thing, this unending, Sisyphean-like job of rolling the stone up-hill and then letting it roll straightway down again, and all to no purpose save the paying of unnecessary fees to lawyers who might better serve their fellows in some other way—instead of all this, we say, the Torrens system proposes that the state shall examine the title once for all, guarantee it, and register it, so that forever afterward it may be transferred almost as easily, quickly and cheaply as a government bond or a share of stock in an incorporated company. The original cost of a Torrens deed, even including the little tax for the guarantee fund, would be little more than the present cost of one title investigation; and ever after the farmer would be able to transfer his property or secure loans upon it, at from one-fourth to one-twentieth the present cost.

The Torrens system is now in force in several states with good results, says the Progressive Farmer.

RUSTING OF IRON AND STEEL.

The Department of Agriculture has been making exhaustive researches of late to discover the comparative rust-resisting qualities of various metals, particularly irons and steels. The question is a serious one, for the amount of iron and steel being consumed annually throughout the country is greatly on the increase. Nowhere is this increase more manifest than in the rural districts. Barns formerly shingled, are now being roofed with metal. Wooden watering troughs have given way to the metal tank. Metal eave troughs, fence wire and nails are all used in quantities around the farm. It is therefore of interest to the farmer to select the materials used in these various articles with care.

It is a noticeable fact that modern fence wire and nails exposed to the elements rust out in a surprisingly short period of time. A roof shingled with the ordinary round wire shingle nails of today, even if they are galvanized, will last at most only a few years. The shingles always outwear the nails. But the old square cut shingle nail of thirty or forty years ago was different. It would outwear the very best shingle.

The same illustration holds good in fence wire. Fence wire that was strung twenty-five or thirty years ago, may be found in many sections of the country in splendid condition today. On the other hand, fence wire

bought six or eight years ago, in many cases, will be found completely rusted out.

Chemical analysis was made of all specimens. The result of this analysis showed that in all cases where the metal had showed superior resistance to rust, it was a very pure metal, and it also showed that the larger percentage of chemically pure iron which the metal contained, the greater were its rust-resisting qualities. The department therefore came to the conclusion that superior rust-resisting qualities of old-fashioned iron were due to the fact that practically all elements except chemically pure iron had been removed from the body of the metal.

The old hand processes of making iron forty or fifty years ago were slow and very expensive, but they resulted in a very superior grade of iron. The introduction of modern methods of making iron and steel has resulted in greatly cheapening the cost of iron, but incidentally it has also cheapened its quality, the result being that the average iron of today is so full of impurities that it cannot properly be called iron at all.

NEWSPAPERS HELP IN SEARCH FOR PULP WOODS.

A recent issue of the New York Herald is printed on paper made from woods which have not been used heretofore for news print paper.

The sheet which newspaper readers hold in their hands each day is made of wood. If one looks closely the little wood fibers can be seen, especially in the margins where printing does not obscure them. The larger part of the wood so used is ground up, while some of it is reduced by the action of chemicals. The chemical pulp has the longer fibers and a certain proportion of it is added to the ground wood to give the finished paper the required toughness.

Spruce, abundant in the New England and Lake States and in Canada, has heretofore been the standard wood for making news print paper, and as long as there was a supply sufficient to meet the needs of the paper industry there was no reason to seek substitutes. But heavy inroads have been made on the spruce forests of the western part of the United States in this day of great circulations and large editions, especially of Sunday papers with their many parts. On a rough estimate, a newspaper with an average circulation of sixty thousand copies and an average edition of twenty pages, uses each day the product of about four acres of forest. When this figure is multiplied by the great number of newspapers published in the United States, many of them with much larger editions, and when this is further multiplied by 365, because many papers are issued every day of the year, it can be seen that the drain upon the forests is enormous. Foresters say that even under the most approved methods known to their profession, it could scarcely be expected that spruce would be able to hold its own, but would need supplementing by other material.

It is but natural, therefore, that paper manufacturers are looking for new sources of supply which will furnish an abundance of wood pulp, at a price which will not be prohibitive. Poplar and a few other woods are used, but they do not go very far.

In the national forests there are many woods considered inferior by lumbermen. Yet they are available for purchase at low rates and many of the timber stands are readily accessible. The forest service, in its desire to utilize to the best advantage all of the resources of the federal timber holdings, has been seeking proper uses for these trees and has experimented in making pulp from them at its pulp laboratory at Wausau, Wisconsin, an auxiliary of the forest products laboratory at Madison. The Wausau laboratory is equipped with standard machinery and all experiments are carried on under conditions which duplicate commercial practice.

As a final test of the value of some of these new woods under practical conditions, arrangements were made between the forest service and the Herald to print some part of its edi-

tion on paper made from various woods that showed promise as substitutes for spruce. These woods were ground at the Wausau laboratory; the product was then mixed with the usual proportion of chemical pulp and made into news print paper, rolls of which were sent to New York for the experimental run.

A PROBLEM AND A LESSON.

Two brothers made a deal in pigs, and as some complications arose in the transaction, the services of mathematical experts were called in, in order to settle the question "How much does Bill owe Albert?"

School teachers, bank cashiers, county officials and other well trained men, got different answers, but a certain answer was finally agreed upon, by all, as correct. The associate editor of Rural World sent the problem to his paper, requesting that answers be sent to him direct, and with several "precincts to hear from," he has more than forty answers, these answers ranging from 50 cents to \$23.75, less than one-half of them being correct, as Bill owed Albert just \$22.25.

Mr. I. A. Henry of Bloomington, Ill., sends the neatest solution of the problem, and I enclose it:

Referring to your problem in the Rural World of February 12th: If Bill entered into full partnership with Albert, he owed him to start with, \$20.50; then when he disposed of the three pigs for \$6 he owed him \$3 more, which equals \$23.50; then when Albert took one at \$2.50, he owed Bill \$1.25, which, when deducted from the \$23.50 will equal \$22.25 that Bill owes Albert.

Now, when the problem was sent to the paper, it was sent, simply as one of those puzzling affairs that get the best of good mathematicians for a little time, but the result surprised the associate editor so much that he wants to "point a moral, and adorn a tale."

Those who have known Rural World for a number of years know that it is closer to its readers than any other farm paper published, and those who have used its advertising pages know that it brings results by far greater than those attained by using the same space in papers that claim ten times its circulation.

If a little puzzling question in arithmetic, with no prize offered for its solution, will bring forty-two answers within six days after its publication, what will be the result of an advertisement offering for sale something which will be needed by a thousand readers

NOTES FROM AN OHIO FARM.

By C. D. Lyon.

It got cold on February 11, snowed hard the 12-13, cleared the 14, was 8 degrees below zero at daylight the 15, warmed up, clouded up and snowed more that afternoon and night, giving us near ten inches. We had eight inches of snow November 8, and since that time scarcely enough to see a rabbit track, but this one is what the kids call a "hum dinger." As all stock is under shelter in this country, and 99 people in 100 have feed and roughage all in the barns, a snow storm such as this one does not entail much suffering or inconvenience, but all the same I wish that it had not come.

The women complain more than any others do, as "their hens were laying two and a half dozen eggs per day," and the latest report was, "four eggs and two of them frozen."

Eggs slid down to 23 cents per dozen, and on the 14th, when I was in town, I saw a city man waylay a farmer with a basket and buy six dozen, as he said that he had to pay 33 cents a dozen in Cincinnati for supposed fresh eggs, a good many times getting a mixture of fresh and cold storage.

My new son-in-law was speaking about having eight hogs ready for market and an offer of \$8.40 per cwt., and the city man said that he had paid 30 cents per pound for pork chops a few days before, saying, "they were not extra good chops

either." And a hog only loses one-fifth in dressing.

We sleighed some and I read all the letters that came with solutions to the pig problem, answering some half dozen that contained stamped envelopes. The first one was from a very good friend, J. S. Howe of Olney, Ill., and later on one from my old friend, W. H. Erwin of Buford, Arkansas, both correct. Howe is a good worker in local institutes, and Erwin used to be when he lived at Pleasant Hope in old Missouri. Some years ago we had one of the best institutes at Pleasant Hope I ever attended, and my wife still has a hand-embroidered apron that was sent her from the domestic science exhibit there. Another Erwin used to live at Iberia, Missouri, and he was a good local institute man. I do wish that about 100 of the good farmers I met at institutes during nine seasons' work in Missouri would each send a postal card to the paper, saying a word or two about farm conditions. Another old institute friend I had a letter from is John A. Spicer, Callao, Missouri, where I recall very well, but John says "the school teacher solved the pig question."

Say, friends, this "pig question" has renewed several old friendships, and I heartily thank those who responded.

The correct answer is \$22.25, and I have said something about it on another page.

NOTES AND NOTICES.

By C. D. Lyon.

A man from Michigan is at our town with a carload of apples, potatoes and beans. He sells potatoes at 90 cents per bushel, grocers' prices, \$1.20 per bushel; apples \$1.60, grocers' prices, \$2; beans, 4 cents per pound, grocers' prices, 6 cents. The groceryman do a whole lot of cussing, but the carload man is selling out fast, and says he will be back in April with seed potatoes.

I have seen Early Ohio seed potatoes sell in our local groceries at \$2 per bushel, when they were selling at \$2.25 per barrel in the city, and have seen as great difference in many prices. Hens are 16½ cents per pound in the city, and 12 cents per pound in our town. So it may be seen that the grocer has his trap set to catch the dollars going and coming.

The miller buys corn at 67½ cents per bushel and retails it out at a dollar; buys wheat at 90 cents for sixty pounds, sells flour at 3 cents per pound and bran at \$1.65 per cwt., shorts at \$1.75 per cwt. The screenings go with mill feed at \$1.50 to \$1.75, and some people think that a good deal of ground up corn cobs get into the bran.

Our hardware man got sore at me because I bought a Galloway manure spreader at about one-half the

price of those he was selling, and then he sold me a corn planter, which is far from satisfactory, at about \$10 more than "mail order house" prices. Now in the future I intend to buy where I can buy the cheapest, and if I get a mail order article that does not suit me to a dot I will send it back.

My loafing place in town is the newspaper office, and the other day I met a man there who was trying to interest the editor in assisting him to get a bonus of \$10,000 from the town for a shoe factory. When he was gone I asked the editor if he did not think it would be a good plan to give me a bonus of \$1,000 to build a new barn, and Sam Smith a \$2,000 bonus to start a dairy and milk plant?

I am opposed to this bonus business when it comes to making a man a public donation in order to assist him to carry on a commercial enterprise, the profits from which are to go into his own pocket. I once knew a town to put \$10,000 as a bonus into a sawmill and in a few years the saw mill went up in smoke. The insurance money went into the mill man's pocket, and the town had a net loss of \$10,000.

Shocks or fright serve to make the cow overly nervous and in consequence her digestive tract may be affected and the flow of milk lessened by the improper assimilation of food.



A HAND ABOVE

—MEANS—

YOUR PAPER MAY STOP

unless your subscription is paid ahead. This may be the last chance you will have to get one of the useful gifts mentioned below.

I WANT YOU TO STAY

I want you to know that I appreciate a stayer in our big family of readers more than a newcomer.

Of course, we are as busy as a bee with one wing all the time getting new subscribers—and we are getting them by the hundreds—BUT OLD FRIENDS ARE BEST, and, if they quit us we may as well give up the fight.

I regard every reader of Colman's Rural World as an old friend, and I know that most of you are glad to take part in the work we are doing to improve the conditions of farm life in the United States.

I am ready to do everything I can to help YOU get your full share of health, wealth and happiness out of life. That is what our edi-

torial staff live for. Are you willing to help me to do the same thing for the other fellow?

BUT HERE'S WHAT I'M DRIVING AT—Is your subscription about to expire? The figures on the wrapper will tell you just how you stand. If your time is about out I want you to get in on my special plan. Even if your subscription does not expire for a number of months you can take advantage of this liberal offer and we will mark the date ahead. Send me \$1.00 and I will extend your subscription one year, or better still if you will send me \$2.00 I will mark you ahead THREE years. Just to show you how anxious I am to get you marked ahead I'll also cancel whatever you owe for back papers—will wipe it off the slate, and forget all about it. This simply means you will be marked ahead from March 1, 1914. Isn't this a fair enough offer.

BUT THAT'S NOT ALL BY ANY MEANS—here's a surprise for you, and a big bargain, too. To every friend who returns the coupon below I'll send Colman's Rural World one or three years (the longer the better) AND IN ADDITION you may take your choice of any one of the gifts below.

Are you with me for one or three years longer?

Your friend at St. Louis,

August Frank

Pres. Colman's Rural World.

Take Your Choice of These Useful Gifts

No. 1. SEWING AWL. You can sew old or new harness, saddles, canvas, tents, rugs, carpets, shoes, grain



bags and many other things with this awl. The patent needle is diamond point and will go through thickest of leather. Awl comes complete with three needles and reel of waxed thread, ready for use the moment you get it. Full directions with each outfit. So simple a child can work it.

No. 2. EVER-SHARP SHEARS. Eight inches long, equipped with a new and simple attachment that keeps them always sharp, and enables them



to cut anything from wet tissue paper to a horseblanket. Positively guaranteed for five years by the manufacturers and heavily nickel-plated. Every home needs a pair of these tension shears.

No. 3. THREE-BLADE POCKET



KNIFE. Made especially for us. Three

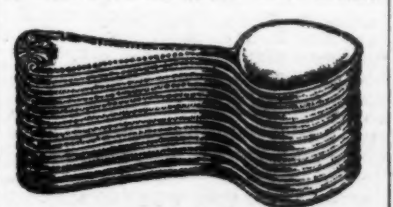
splendid blades, of very fine cutlery steel. This knife is built for business and is strong enough and sharp enough to rip a cotton bale or cut a sapling. Measures 8½ inches when opened. Bone handle. Sent by mail, prepaid.

No. 4. BARBER'S RAZOR, imported from Germany. Guaranteed. Made of selected steel, hand-forged, extra hollow ground, 5-8-inch polished



blade, black horn handle. With ordinary care will last for years, and won't pull. You will find this razor nearly the equal of any \$3.00 razor. Sent prepaid, ready for immediate use. Extra good value.

No. 5. ONE DOZEN SILVEROID TEASPOONS, 6 inches in length, made of solid silveroid (pure white metal)



which will not tarnish, and lasts for years. The edges are handsomely beaded after the design of the most expensive spoons made. Made for every day usage and keep their brilliant finish.

PLEASE SIGN THIS COUPON TODAY

August Frank, President Colman's Rural World,
718 Lucas Ave., St. Louis, Mo.

I enclose \$1.00 (or \$2.00) for which extend Colman's Rural World one (or three) years. In accordance with your special offer, you are to cancel what I owe for back papers and send me free of charge the Gift I have numbered below.

What Gift do you want?.....

Name

Address

NOTE—If your subscription is already paid ahead you can take advantage of this remarkable offer and we will extend your subscription from the time it is now paid to.

The Pig Pen

BROOD SOW MANAGEMENT.

To produce strong healthy litters it is not only necessary that the sows be fed correctly upon feeds that furnish sufficient muscle, bone and energy-making materials, but that they be handled wisely during the period of gestation.

The mother sow needs food for three important purposes: First, for her own maintenance; second, for growth on her own body, and third, for the nourishment of the fetal pigs. Corn lacks muscle and bone formers and in addition is too concentrated, not bulky enough for breeding swine.

Tankage, meatmeal, linseed oil meal, skim milk, buttermilk, bran, oats, middlings, shorts, soybeans, clover and alfalfa are the logical supplements to corn in the Middle West. At the Iowa station we have found that most excellent rations for gilts carrying litters are:

1. Corn 88 to 90 per cent, meatmeal or tankage containing 60 per cent protein, 10 or 12 per cent.
2. Corn, 67 per cent; finely-cut clover or alfalfa, 25 per cent.
3. Corn, 80 per cent; oats, chopped clover or alfalfa, 10 per cent; meatmeal or tankage, 10 per cent.

For old sows the proportion of meat meal or tankage may be cut down practically one-third to two-fifths and still get excellent results. Stronger, healthier litters having more hair, more color and more bone have been the result whenever we added a suitable protein and ash supplement to corn.

When we selected our supplements wisely, we got cheaper pigs. At present prices for purchased protein and ash supplements, meat meal and tankage are our cheapest sources.

Above all things, excepting the food supply only, an abundance of exercise is most important. All classes of pregnant animals do well only when abundant opportunity for exercise is allowed. The general tone and vigor of the mothers are reflected in the offspring; the better the general health and condition of the dam, the stronger and more vigorous the young. Range or pasture is perhaps the best of all.

Allow the sows to follow cattle for awhile, but be sure to remove them when they tend to become clumsy and heavy. Scatter the feed over the ground, such as sheaf oats and soybean hay, and let the sows gather it. Feed on the side of the field opposite the sleeping bunks.

Allow hay in racks, the eating of which is conducive to light exercise. Shut the sows from the houses in the middle of the day, rather than allow them to huddle up and snooze peaceably. Schemes to induce exercise cost little, yet the returns are considerable.

Warmth, dryness, ventilation and sunlight are the essentials of an ideal hoghouse. Such conditions may be secured with a little care. Good dry bedding is needed, and to be kept dry it must be changed regularly. Arrange the houses so as to avoid drafts and heavy winds, preferably placing them in sheltered nooks.

Although the hog can stand considerable cold, yet the breeding hog does not have the fat which would ordinarily keep the fat hog warm, neither does the breeding sow have such a warm coat as the boar, for

instance, that roughs it. We have found that sensible shelter saves many cents.

We hog men cannot afford to feed our hard-earned corn and other grains to lice and worms. Crude oil is cheap, costs not more than \$4.00 a barrel, is easily applied and does the lice up brown and black. It kills the nits at one application and may be used in winter, because it is an oil and does not evaporate. An old broom, a sprinkling can and a couple of hurdles, handled by two active men, are sufficient equipment for ridding the farm of hog lice.

Worms are a serious drawback. I know no better remedy than Santonin 6 grains, calomel 4 grains, to 100 pounds of hog given once on an empty (12 hours off feed) stomach and repeated in 10 days if necessary. It is not well to use any worm medicine upon sows within a couple of months of farrow, because all pregnant animals in advanced stages have some tendency to abort when receiving a strong laxative.

Laxativeness of the bowels is highly desirable, as costiveness is a menace. Plenty of exercise, combined with laxative feeds such as tankage, oilmeal, bran, alfalfa and hay, will largely solve the problem. If it does not, a week before farrowing an emergency remedy of an ounce of Epsom salts per hundred pounds of hog will help considerably.—Professor John M. Evvard in Farm, Stock and Home.

FARM HOG QUARANTINE.

By quarantine pen we mean simply a pen or a few pens which are situated a safe distance from the main hog pens or yards. Such a pen should contain comfortable sleeping quarters as well as room for exercise, and it should be so arranged that the owner need not go inside to feed or water. Such an arrangement seems a lot of



IN THE WHEAT FIELD.

bother, but it is a very good plan to follow. As the number of hogs increases, diseases will become more troublesome. Already cholera has found its way into many sections of the Northwest. Every new hog coming to the farm should be kept by itself for at least ten days or two weeks.

Then if it has shown no indications of sickness, spray it with a good dip and introduce the animal to the herd. Keep the quarantine pen clean and ready for use. If any of your hogs get sick, and you have any reason to suspect a contagious disease, at once separate the well hogs from the sick.—Professor Robert C. Ashby, Washington Station.

From the Wisconsin Experiment Station comes the following suggestions for the care of cows during the winter months: "Feed cows daily one pound of grain for every three pounds of milk produced, 25 to 40 pounds corn silage, and whatever clover or alfalfa hay they will eat. Do not keep them out in the cold for a longer time than they appear to enjoy such an outing. Allow them to have water which is not colder than that from a deep well.

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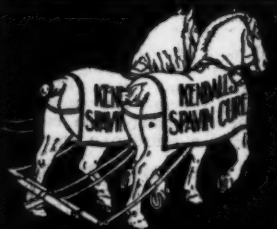
After the hay and grain crops are harvested, a great many weeds, colunteer crops and aftermaths spring up in the fields. The farmer who is

sufficient protection against all sorts of weather is a serious error; on the contrary, a sheep is a very susceptible animal. Steady conditions are all right. A good fleece is proof against great cold so long as it is steady, but the sudden changes from warm to extreme cold are very trying. Some suitable shelter against storms should be provided, to equalize conditions as far as possible.

BETTER.

If a ewe loses her lamb she should be required to mother a lamb of another ewe that has twins or is unable to supply her lamb with enough milk. Many ewes can be induced to adopt a lamb if time and patience is exercised. Remove the skin from her own dead lamb and place it on the lamb to be adopted by her. Since she knows her lamb by the odor and not by sight this method will be effective in many cases. The old skin may be removed in a day or two.

If the sheep is warm and uncomfortable in winter it does not eat well. And if it does not eat well it produces neither flesh nor a good fleece. Many people wonder why their sheep do not produce such heavy fleeces as they used to produce. The housing will enable one to answer that question in many cases, though of course the method of housing cannot account for it all.



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RIGHT COUNTRY, right climate, right people, right prices, right terms. Write Development League, Bessemer, Michigan.

FOR SALE, 80 acres, small house, good young orchard, for \$600 cash. Will pay purchaser's railroad fare. Come examine it. G. W. Johnston, Grandin, Mo.

MY 440-ACRE stock ranch in southwest Missouri, on the sunny side of the Ozarks. J. W. Blankinship, Hollister, Mo.

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TEXAS SCHOOL LAND for sale by the state. You can buy good land at \$2 per acre; pay 30¢ an acre cash and no more for 40 years but 3 per cent interest; send 6¢ postage for further information. Investor Pub. Co., Desk 51, San Antonio, Texas.

WELL IMPROVED 45-acre farm in the west side of Barry Co.; fine location; 1/2 mi. to school; 1/2 mi. to church; will sell at a bargain. If interested, write me for complete description and price. Terms if desired. M. L. Buxton, Purdy, Mo., owner.

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BEST POULTRY JOURNAL PUBLISHED, for the price, 12 months 15 cents. Chock full of hen sense and common sense, by Hobbs, Kempster, Quisenberry, Lawry, Hill, Branch and Searle. Useful Poultry Journal, Trenton, Mo.

SINGLE COMB WHITE LEGHORNS—Pure white, pure bred. Nice males for sale; no females. Fancy eggs for hatching, \$4.50 per hundred. Good as the best; testimonial on request. J. E. Haynes, Prairie du Rocher, Ill.

FOR SALE—Indian Runners, one drake and five ducks; golden Fawn and White—kind that lay big white eggs. Mrs. Mary L. Singleton, Laddonia, Mo.

FOR SALE—White Indian Runner drakes, Spencer strain; pure white. My ducks lay white shell eggs and many of them. Drakes, \$2.00 each. J. E. Haynes, Prairie du Rocher, Ill.

EGGS—Fisher strain White Rocks, \$1.25 per fifteen; S. C. B. Leghorns, 75¢ per fifteen; \$5.00 and \$4.00 per hundred. Wendell Walker, R. 2, Sparta, Ill.

ROCKS, reds, silver laced Wyandottes and Brown Leghorns; eggs by express or post. Write for free poultry book. Sunnyside Poultry Farm, Box 22, Owensville, Mo.

EGGS—From B. P. Rocks, Rhode Island Reds, White Orpingtons; all of the best strains; prices \$2 per 15; \$3.50 per 30; \$5 per 45; satisfaction guaranteed. Mrs. M. E. Orewyler, Miami, Okla.

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FOR SALE—Full-blooded Mammoth Pekin ducks. Eggs, \$1.00 per setting. Address Mrs. A. Brower, Rhinehart, Mo.

ROSE COMB REDS, eggs, \$4.25, 100 eggs; \$2.75 50; \$1.25 15. Fisher strain. English White Indian Runner duck eggs, \$2.50, 15 eggs; Add 20 per cent on egg prices. I will prepay parcel post or express. James A. Harris, Latham, Kansas.

BARRED PLYMOUTH ROCKS—Both matings; eggs reasonable for the quality. Won 1st, 2d and 5th pullets, 1st, 2d, 3d and 4th cockerels, and 1st and 2d hens at Jefferson City, Mo., with 143 Barred Rocks on exhibition. W. W. Graves, Jefferson City Mo.

OZARK STRAIN—S. C. R. I. Reds, eggs, \$1.00 to \$2.00 setting; \$5.00 to \$8.00 per hundred. White and fawn Indian Runners, eggs, \$1.00 for 13. E. M. Pinto, St. James, Mo.

LIVE HENS WANTED—Printing or advertising space given in exchange. Mueller, 3703 Finney Ave., St. Louis, Mo.

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MEADOWBROOK STOCK FARM, L. M. Wade, Prop., Centertown, Mo., Breeder and raiser of thoroughbred Poland China hogs. Prices reasonable. Young stock for sale at all times. Correspondence a pleasure.

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MAKING THE BOYS AND GIRLS CONTENTED AND HAPPY.

By W. A. Graham.

This subject alludes to the boys and girls growing up on the farms of the nation. That, as a general thing, they can be so dealt with that they will grow up contented with their occupation, and happy in their home life, has been proven in numerous instances. With the best efforts parents can put forth, it cannot be expected that finally all the boys will choose farming for their life's work, and most of the girls become their wives, but a much larger number can be retained than is now the case. To interest them, to make them contented, and to have them happy in their home life, many radical changes must be made in the work and management of both the farm and in the home.

The children of parents living on farms are the grandest possession they have. Not a thing of importance should be neglected to make them intelligent, healthy, contented and happy. How to accomplish all this is the supreme question that awaits a correct answer, if that is possible. In the first place, there are all kinds of dispositions to deal with. Hardly any two alike. A second consideration is the natural inclinations or desires of the individuals. Then third, the awakening and arousing of the minds to the best possibilities of the lives, as the children grow to manhood and womanhood.

It is a very responsible and a stupendous task, and one that challenges the wisest and gravest thoughts of all parents on the farms. When dealing with the human minds and dispositions, varied as they are in the individuals, it is a totally different thing to growing farm stock or managing the general affairs of the farm. All kinds of stock can be managed and controlled by the will of the possessor, and be made to adapt themselves to what is wanted of them. The general affairs of the farm can be made to suit one's inclinations, but when reading with the boys and girls an entirely different proposition manifests itself.

If anything can be done to assist in the turning of the minds of the boys and girls into line with the desires of the parents, it must be done by love and gentle persuasion, and attempt to deal with each son and daughter according to his or her disposition and temperament. Some general principles and plans can be adopted, and put into execution, that will in a measure meet the requirements of making children contented and happy on the farm; but if after all the ingenuity and plans of the parents have been exhausted and still some of the boys rebel against farm life and a portion of the girls decide that life in a town or city is the only thing that will satisfy them, then the wise parents will try to get them such training as will make these new environments, when adopted, a success.

How to manage the boys—we speak of them in a special way, many of whom would be better off on the beautiful farms of this country, should be well considered. Every parent, the mothers as well as the fathers, should be very much interested in this. For if the boys can be put on the road to prosperity and contentment on the farms it is self-evident that the girls will also be greatly benefited. The more successful boys that can be instructed, satisfied and retained as farmers, the greater the number of young women that will be required as wives and

mothers.

It is quite necessary, if it is at all possible, to furnish a good education to both the boys and the girls. This is possible now, and at the same time a good practical knowledge of farming and housekeeping be learned. Have as good and convenient homes, well furnished with all modern equipments as possible, and do not neglect plenty of the best reading matter, and music and musical instruments. Encourage neighborhood sociability. Allow the boys and girls—begin this early—time and suitable clothing for all occasions when they mingle together at church or home and public entertainments.

Besides all that has been mentioned, try to encourage them to work faithfully and cheerfully by offering them reasonable pecuniary rewards. That is to say, pay them reasonable wages for their time and labor. Both boys and girls begin at once to take great interest in work if some money is coming their way. Never say anything regarding board or all plain work clothes. Allow those things to pass unnoticed, and furnish them free all such necessities. But it is a splendid plan, when regular wages are allowed, to require them to select and purchase all their better clothing, notions and necessities, with the money allowed them monthly or weekly for their work, whether it is the boys out on the farm or the girls in the home.

Such a course teaches them the value and use of money, and splendid lessons of how to judiciously and carefully invest it. The parents are none the poorer by paying for the work, if the children use it for their personal adornment, or the actual necessities required to help them to appear neat and well dressed in society. Nothing is more humiliating to the average boy or girl of spirit and ambition, than to try to mingle in good and genteel society in clothes out of style, and poor in quality.

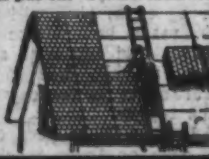
Lastly, for this article is growing too long, a very important thing is that all boys who can be induced to become farmers as soon as they can save some money from their wages or from the receipts of cash for crops or stock, if they are light partners in the products of the farm, induce or influence them to buy small tracts of land. It may not be more than ten or twenty acres. Such a course establishes them in farming operations. It is not long after such a purchase is made until they want to improve the land with buildings, and in due time they choose some worthy girl of the neighborhood and get married.

This is as it should be. They settle down satisfied, and start out in life happy and contented. Not only are such young married folks on the highway to success and a glorious future, but the parents are rejoiced and delighted to have them settled near them. The advice that has been given is practical, and can if well followed lead only to the best of results and great satisfaction to both the children and the parents.

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Horseman

An unusual lot of money is to be offered in the show rings of the middle West this season.

The Mattoon, Ill., Trotting Association will give a Fourth-of-July meeting this year on July 1st-4th, and a first-class program is to be offered. F. A. Snyder is the secretary.

Alva Dillon, 2:15½, is again to be located in Kansas. He was recently shipped from Sedalia, Mo., to Cawker City where he will be in the stud. He is owned by J. C. Elliott, at Belleville, Kan.

Happy Walnut, 2:16½, added two new ones to his list of standard performers this year in Gabriella, 2:18½, and Am I Happy, 2:29½, although the last named has never been reported in the published 2:30 lists.

A subscriber to Spirit of the West wants to know the present address of C. E. Seeley, who has followed the Kansas and Missouri circuits shoeing for the last few years. Any one giving this information to this department will confer a favor.

Richard Siegle has moved from Murfreesboro, Tenn., and located at Tulsa, Okla., where he will train. Other trainers that were already located there are Bion Shively, John McQuail and Zack Thurman.

Nutcrusher, p. 2:20, owned by Dr. W. P. Terrill, at Huntsville, Mo., is wintering fine at the home of his owner, and will be offered for public service. He is the sire of several in the list, and a number of sterling race horses.

N. Swope, at Windsor, Mo., has recently traded all his horses for land, and is, he says, temporarily out of the horse business, but expects to re-enter and stronger than ever when he gets his present business arrangements shaped up as he wants them.

R. H. Garrett of Calhoun, Mo., has sent his trotting stallion, Am I Happy, 2:29½, to W. B. Taylor to be trained. He was trained last season up to miles around 2:16, but owing to the drought, was not started only for a record.

Jas. A. Houchin is arranging for one of the biggest three days' combination sale at Jefferson City, Mo., March 11th, 12th and 13th that has ever been held in that part of the country. The public is invited to sell their best horses with him.

John Grey, who trained last season at Topeka, Kan., and raced at a few of the near-by meetings, disbanding his stable at the close of the season, has been training the Allison Stock Farm's horses at Oklahoma City, Okla.

HANDLING BROOD MARE—FOAL.

In my opinion, there is nothing on the farm that pays a better profit than the good brood mare. Usually a pair of good strong mares will do as much common farm work as horses of the same size, besides raising two colts. The brood mare should be worked before foaling, especially in winter, as she will need the exercise. I do not recommend heavy pulling for the mare in foal, but the common farm work that the average farmer has to do during the winter months, as hauling manure, wood, fall plowing, gathering corn, etc., will in no wise hurt the mare, but will be beneficial to the mare, and the foal as well. If they are carefully handled, they may be worked up to the day of foaling without injury.

It is well to give the mare a rest of two or three weeks after foaling. I have known mares to be put to work the next day, but I do not think this a good practice. However, they may be worked sooner than I said if they are properly handled. Great care should be taken on the start not to get her overheated. It is not well to allow the colt to follow the mare at any time when working. Let the mare cool before the colt is turned

to her. If kept away very long, the colt should not be allowed to take all the milk it wants, but turn it away for awhile before finishing.

Teach the colt to eat grain as soon as possible. Shelled oats is good feed. It will learn to pick grass by watching the mother. The colt should be taught to drink early, as the milk does not satisfy the thirst.

It is a good practice to halter the colt when very young and teach it to lead. This is much easier accomplished while young, than if allowed to go until it is two years old. Begin by haltering; then when a little older place a collar and light harness upon it and drive it around. As soon as it is two years old, hitch it in beside its mother and it will be no trouble to work.—E. E. Rushing.

COLIC IN HORSES.

Among the numerous ailments to which horseflesh is heir, the so-called colics are probably the most common at this season of the year. The term colic has long been used to designate an abdominal pain caused by some disturbance of the stomach or intestines, and as these organs are quite complicated in the horse, it is obvious that the word does not signify any special disease. Many stockmen are prone to think that all colics are alike and many conclude that because one horse recovers from an attack without treatment, all other cases have a like chance. This, however, is not the case, as the severity of an attack depends largely on the variety of colic and usually requires an experienced

paws the ground and stamps, shakes himself, and can be prevented only with difficulty from lying down. Later on, he often totters, groans, kicks with the hind legs at the abdomen, looks round at his hind quarters, whisks his tail, stands over at the knees, arches his back, stretches the head and neck, and places the hind feet under the body. As a rule, the animal lies down very carefully and slowly or makes attempts to lie down, but sometimes may throw himself recklessly on the ground. He may lie still or roll and kick violently. He may sweat profusely and bloat and die within four or five hours from the outset.

During the onset of an attack of colic it is well to give one quart of raw linseed oil, to which has been added one ounce of spirits of turpentine and two drams of fluid extract of nux vomica. Feed should be entirely withheld for at least twenty-four hours, but allow plenty of water. If bloat is excessive it should be promptly relieved with a trocar by an experienced hand.—J. W. Kalkus, Assistant Veterinarian, State Experiment Station.

BREAKING THE COLT.

Now is the proper time of the year to break the colt. At this season a person has more time at his disposal than in the spring. The colt broken now will be worth more to the farmer than if broken in the spring, because it will be ready to take its place in the plow and can stand more work.

The first thing in the line of break-

teeth frequently cause an overgrowth of the corresponding teeth on the opposite set and this overgrowth should be leveled down so as to permit the uppers and lowers to come together and present a perfect grinding surface.

Much of the loss of condition among horses is due to defective teeth preventing them from chewing their food. A Minneapolis man who owns a valuable race mare says he is having a set of teeth made for her and some of her bad teeth crowned with gold, all at a cost of \$3,000. She ran away and smashed things last summer when she had a bad attack of toothache. Maybe there is no truth in this yarn. But it makes good reading and ought to suggest better care of the teeth of our animals.

RAISING BIG HORSES.

The big horse is at the top of the equine heap. He is in demand everywhere. The city buyer buys most of the drafty sound kind of horses, the farm itself is constantly crying for the powerful draft type. We are using bigger tools, larger machines, we like to plow deeper. This requires more powerful horses.

Of course, one cannot raise big horses from ponies. The first essential is good draft breeding. The mare should be mated to the pure-bred stallion, which weighs around a ton and is sound. And the more drafty are the mares, the more drafty the colts will be. Every farm should have work mares of high-grade or pure-bred draft breeding. They should do the work handily and raise valuable, high-priced colts besides.

But some farmers mate their mares to big draft stallions and then raise mediocre small colts. Why is that? It is usually a question of not enough feed.

After all, wise feeding is the prerequisite to raising big horses. A farmer who is stingy with his feed had better try something else than the draft horse business.

First of all the dams of the colts should be well fed, so that nursing will be a profitable occupation for the youngsters. Then, colts should be given a handful of grain as soon as they will take it, not much, but enough to teach them to eat it. By weaning time they should be eating oats, bran, some corn and alfalfa, so that they will suffer no setback when the mother's milk is stopped. They should have the run of a paddock. The more outdoors, except in inclement weather, the better. They should be grown under natural conditions.

A colt should never be overfed, but always have just what it will clean up heartily. If he gets out of condition give a laxative and a hot bran mash. Keep him in perfect health and always ready to eat. Then keep liberal amounts of feed before him. The buyer will come to lead him out of the pasture at a handsome price. It pays to feed draft-bred colts liberally.

Two tons of cascara bark have just been sold from the Siuslaw national forest, Oregon, at one cent a pound.

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A PRIZE WINNER.

man to make a differentiation.

The common cause of colic at this season of the year is the sudden change from old to new hay. This is so relished by the animal that the stomach becomes overloaded, causing a fermentation and resulting in a distention of the stomach or intestines, or both, by gas. This type of colic is one of the most dangerous and rapidly fatal forms of the disease known. The construction of the stomach and intestines is such that once distended it is impossible for the accumulated gas to escape unless it is aided either by the introduction of a stomach tube or trocar.

It is well to keep in mind that horses are apt to overload on new hay and every feeder should be very cautious and give only a small amount at a time until the animals become accustomed to the change. It is also well to give every horse that receives dry feed a bran mash, either wet or dry, containing a handful of linseed meal and a little salt, at least twice weekly. Such slight precautions when neglected often result in the loss of a valuable horse.

The symptoms of colic are no doubt familiar to all horse owners, although the symptoms differ somewhat with the various forms of the disease, they may be summed up as follows:

Pain, which may come on suddenly or gradually. If in harness the horse goes "short," gives way in the hind quarters, stops, becomes restless,

ing is to pet, brush and get the good will of the colt. A few days before you care to hitch it up, harness and bridle it and leave it stand or lead occasionally by the bridle. If the colt is any ways high-lifted you better get a neighbor to help you hitch it. Hitch to a wagon or any vehicle desired and that has a tongue to it.

Choose as near an ideal horse as you have to break and work the colt with. Hitch and tie the colt to the old horse's harness by the halter strap and then lead the colt until well started.

Last, but not least, use kindness throughout the process of breaking. Do not use blows for every misstep or you may ruin the colt for life.—E. B.

EXAMINE THE HORSE'S TEETH.

Not very many of us pay as much attention to the mouths of our horses as we should. I learned from my father when I was a lad that sometimes horses suffer from toothache just as we human folk do. Good mouths in our horses would prevent many cases of indigestion, colic and lack of energy. Examine the horse's mouth and see that the teeth are in smooth working condition. If there are rough edges of the teeth that will lacerate the cheeks and tongue have them filed down by a competent veterinarian. This will allow the full chewing of the food and improve the general health of the horse. Decayed

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AGRICULTURAL SCHOLARSHIPS INSTEAD OF TRIPS TO WASHINGTON.

U. S. Department of Agriculture
Recommends the Former as the
More Valuable Prize for Youth-
ful Members of the Agri-
cultural Clubs.

The Department of Agriculture recommends that in place of a trip to Washington the young prize-winners of the corn, canning and poultry, and other agricultural clubs be given a year's course in practical training at some agricultural college. In case the young champion's academic training would not enable him to enter the agricultural college of his state, a more elementary course in a school where agriculture is taught or a course in an agricultural high school are recommended.

The department considers that such courses have considerably more lasting value for prize-winners and for the agriculture of their sections than flying trips to the capital. The state and local organizations which have been paying for these trips have been sincerely interested in developing a true appreciation of farming as a business among the boy and girl farmers. Some of these have already considered this question and have decided on the agricultural course as the more desirable prize.

One of the first persons to raise the question as to whether the practical training or the more spectacular trip was preferable, was Willie P. Brown, an Arkansas corn club prize winner. Given his choice of all the prizes offered by the state, including the trip to Washington, he selected a scholarship giving him a year's tuition in an agricultural school. This gave impetus to the idea in Arkansas and now the biggest annual prize offered the corn club boys is a scholarship given by the Bankers' Association. The same association gives a similar scholarship to the girl champion of the canning clubs.

Other suggestions regarding prize have been made from time to time by those who have been most interested in these clubs and understand the needs of the boy and girl farmers. Some of these suggestions are offered herewith for the consideration of others who might care to profit by them.

Two Weeks' Courses for County Prizes.

While a year's course with all expenses paid is the suggestion of the department for the biggest prize for state winners, less extensive courses might be offered to county winners. It has been suggested that such counties as care to give prizes, give one or more short courses in the state agricultural and mechanical colleges to the fortunate county champions. These courses are usually only two weeks long and are held in winter or in summer. The training given is of the most practical sort, and the amount of time spent is no gauge of the amount of benefit to be obtained. These short courses have already been given as prizes by certain counties, and have proved most valuable to the young people.

Large Cash Prizes Not Encouraged.
Large cash prizes are not to be encouraged according to those who have worked with the young contestants. Better suggestions are as follows:

- A pair of registered pigs.
- A pair of full blooded chickens.
- A fine colt.
- A registered calf.
- A up-to-date corn planter.
- A two-horse wagon.
- A gold watch.
- Books on agriculture.
- A double-barreled shot gun.
- A first-class bicycle.
- A ton of good fertilizer.
- A \$5 hat.
- A fireless cooker (for girl winners.)

More Prizes Make More Contestants.
In general it is better to offer many small prizes than a few large ones. If twenty boys try for a prize and only one is fortunate, some of the nineteen unsuccessful contestants will probably be too discouraged to try again. But if five of the boys are rewarded for their efforts, more

merit will have received recognition and the remaining fifteen will see more possible opportunities of success the following year.

Some boards of trade and chambers of commerce have also recognized the efforts of the clubs, by giving banquets for the young people and entertaining them with street car and automobile rides. On other occasions clubs have been honored by an invitation to march in parades, where they have attracted deserved attention.

A Trip to the State Fair.
From Memphis, Tennessee, comes an interesting story which is a sample of what has been done in other states for young prize winners. In the three states (Arkansas, Tennessee and Mississippi), which are annually represented at the Memphis Tri-State Fair, it was decided to send certain boy prize winners to the fair as a reward for their excellence.

A trip to a fair is a more or less spectacular event as is the Washington trip, but it gives the young farmers certain concrete agricultural experience, which they do not receive from excursions to the sights of Washington. At the fair in question the young men were housed on the fair grounds in tents, two to four in each tent, all in charge of men employed by the state or government to look after their interests.

The young men had a regular program which kept them busy most of the week of their stay. One day an expert took the young men to view the improved farm implements on display. The boys were shown the machinery, and its uses were explained. Another day a seed expert showed the boys the exhibits of seeds and gave them practical advice on seed selection. The boys were taken in the same manner to view the beef cattle and other live stock. They were taught to pass judgment on the good qualities of the animals. They were schooled in the method of judging the best pigs. Informal lectures were given at the camp on these various subjects. The young men took back much valuable knowledge with them besides having a good time.

LATEST VEGETABLE.

Ever eat a dasheen? It's the very latest thing in vegetables, and unless you have had one in some form or other you cannot rank high as a vegetarian. Domestic science experts at the Kansas Agricultural College have recently made tests at the request of the United States Department of Agriculture using dasheens in various forms. Flour made from the new vegetable, which resembles the potato somewhat, was used in gruel, soup, biscuits, muffins, cookies, doughnuts and pie crust. As whole vegetables, dasheens were served baked, stuffed, scalloped, boiled, mashed, creamed, candied, in pie and in pudding.

According to the tests, the flour was quite satisfactory in soups, doughnuts and pie crust. It gave fair results in cookies and muffins, but the biscuits were not particularly appetizing. The flour has a comparatively low nutritive value. It may be substituted for about half white flour in a number of recipes, but cannot be used alone except in soups. Better results were obtained from cooking the whole vegetables particularly when baked, stuffed or when made into soups.

Kansas cannot grow dasheens as they require a much warmer climate, but in the South this vegetable has become quite popular as a substitute for potatoes.

AGRICULTURE CONCERNS MEN OF MANY VOCATIONS.

Agriculture of today is of direct interest to people in many walks of life. This was especially noticeable at the agricultural extension school held recently in Harrison county. The sessions of the school were held in the buildings of Franklin college in the town of New Athens, Ohio. Among those who attended regularly were members of the college faculty, students, business men, district school

teachers, a doctor and three ministers. Farmers, of course, comprised the larger part of the attendance. The student body of the little college came largely from the neighboring farm communities. One of the professors in attendance teaches agriculture. The teachers were anxious to learn something that might help them in their work. Progressive country pastors came because they realized that they can more adequately serve their people if they are conversant with farm problems. As evidence that this fact is appreciated, one of the ministers in attendance came several miles to this school, staying over night in town. The business men of the village were there because they had vegetable gardens and fruit trees which they wished to care for properly. Their presence indicated a commendable spirit of co-operation which is always desired in rural communities. With such men as pupils, who shall say where the influence of an agricultural extension school shall end?

FARM SEPARATORS HAVE VERY MANY ADVANTAGES.

There are a number of very good reasons why a farmer should own and operate a cream separator. The other day while addressing a meeting of Illinois dairymen, C. E. Lee of the College of Agriculture of the University of Wisconsin, enumerated the following:

1. There is little or no loss of skim milk which of course has a high feeding value.
2. There is less danger of introducing such contagious disease as tuberculosis into the herd if the milk is skimmed at home and only the milk produced upon the farm is fed.
3. Time is saved by not hauling whole milk to the factory.
4. Less products have to be cared for upon the farm.
5. There is a wider market for cream than for milk.

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In salting butter with brine always strain the brine; there are lots of specks in brine unstrained.

One decided advantage with dairying is the quick returns. The feed given the cow one day is returned in the form of milk and butter fat the following day and can be marketed the next day.

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From the Producer To the Consumer

FARMERS AND GRAIN DEALERS MEET.

Opens at Ottawa, Feb. 17, 1914—State
President John H. Walker of Unit-
ed Mine Workers of America
One of the Speakers.

The annual convention and banquet of the Farmers' Grain Dealers' Association of Illinois was held in Ottawa, Ill., on Tuesday, Wednesday and Thursday, Feb. 17, 18 and 19. The convention was in seven sessions, and a banquet session, beginning with the morning session on Tuesday, Feb. 17. Hon. John H. Walker, of Springfield, Ill., state president of the United Mine Workers of America, will be one of the speakers. The program for the convention contained many interesting numbers, and was as follows:

TUESDAY, 9 A. M.

Call to Order—By the President.
Music—Miss Lela Pettit.
Reading—Miss Esther Schoch.
Invocation.
Address—Hon. Edw. Bradford, mayor of Ottawa.
Response—Hon. H. W. Danforth, Washington, Ill.
Reading of Minutes.
Appointment of Credentials Committee.
Report of Secretary.
Report of Treasurer.
Announcements.

AFTERNOON SESSION, 1:30 P. M.

Call to Order—By the President.
Music—Miss Fiebairn.
Reading—Mrs. Grace P. Treary.
Discussion—"In and Out Weights"—John Goembel, Strawn, Ill.; W. G. Nelson, El Paso; F. E. Davis, Mahomet.
Discussion—"How to Collect Freight Claims," "What Classes Are Collectible?"—F. J. Kramer, Flanagan; M. L. Lowe, Minonk; A. N. Steinhart, Bloomington.
Discussion—"Conditioning of Grain, Does It Pay?"—Clarence Farlow, Fisher; Charles Cochran, Utica; M. M. Wright, Dorans; Roy Jones, Monticello.

EVENING SESSION, 7:30 P. M.

Call to Order—By the President.
Music—Justin Jaegar.
Address—Hon. Charles Brand, Washington, D. C.
Address—John H. Walker, state president United Mine Workers of America, Springfield, Ill.

WEDNESDAY, FEB. 18, 9 A. M.

Call to Order—By the President.
Music and Reading—Mrs. Grace P. Treary.
Invocation.
Discussion—"Aggregate of Wealth for Co-operators"—J. A. Henebry, Plainfield and volunteers.
Discussion—"Side Lines for Busy Managers"—Oscar Jacobs, Yorkville; C. H. Pratt, Cropsy; John Wine, Mt. Morris.

Question Box.

Address—M. R. Myers, Chicago.
AFTERNOON SESSION, 1:30 P. M.
Call to Order—By the President.
Music.

Discussion—"How to Bring the Producer and Consumer Together"—John Miller, Galva; Jesse Simpson, Danvers; George Brunskill, Pontiac; Volunteers.

Discussion—"Standardization of Grain"—Dr. J. W. Duvel, Washington.

Question Box.

EVENING SESSION, 7:30 P. M.
Call to Order—By the President.
Music or Other Entertainment.
Question Box.
Address—Henry Wallace, Des Moines, Iowa.

THURSDAY, FEB. 19, 9 A. M.

Call to Order—By the President.
Music.
Invocation.
Report of Nominating Committee.
Report of Resolutions Committee.
Election of Officers.
Addresses by Officers Elected.
Address—Hon. E. G. Dunn, Mason, City, Iowa.

Address—Hon. Charles Adkins, Bement, Ill.

AFTERNOON, 1 P. M.

Banquet at Clifton Hotel—All Co-operators:
Fred Mudge, Peru, Ill., chairman.

TWELVE GOOD REASONS WHY CORN BELT FARMERS SHOULD RAISE MORE LIVE STOCK.

Some of the reasons why corn belt farmers should raise more live stock are the following:

1. Because it will pay.

From now forward it will be more profitable than heretofore to raise cattle, hogs, sheep and horses on corn belt farms, for the reason that all conditions have changed and are changing to favor the grower.

Range competition has almost ceased. Average prices for live stock are the highest on record. Pure-bred animals are still selling at relatively low figures, but young stock for feeding are at a premium.

There is a world shortage of live stock, especially cattle, and the populations of all civilized nations are growing faster than their meat supply. As a matter of fact, the latter is diminishing, hence the removal of the tariff has not and will not add materially to meat supplies in this country.

2. Because the country needs more meat.

Official figures show an enormous net decrease in the meat food supply of the nation, both actual and relative to population; while market scarcity, the decline of exports and high record average prices corroborate them.

The range supply has declined seriously. Other sections have not made up the deficiency, but production has been reduced in them also. According to the latest Government figures, since January 1, 1907, there has been a decrease in the United States of 15,535,000 head, or 30 per cent of beef cattle; 471,000 milk cows; 1,758,000 head, or 3 1/2 per cent of sheep, and a decrease during the past two years of 4,442,000 head, or over 7 per cent, of hogs; while during the same six years the population has advanced fully 10,000,000, or about 12 per cent.

3. Because the soil needs more fertilizer.

The joint problem of meat production and soil preservation in this country is the most vital problem before the American people today. It will soon be realized that the raising and feeding of live stock on farms is essential to the continued growing of crops.

As the population of the United States increased and drifted westward from the Atlantic slope across the Alleghenies with its flocks and herds toward the rich prairie lands typified by Illinois, the older and more densely populated Atlantic and New England states found that they could not successfully compete with the abundant fertile resources of the newer Central and Middle-Western states in beef and pork production, and the live stock industry of the East declined in consequence. Then the fertility of Eastern farms declined in consequence of the partial abandonment of live stock raising on them, and thousands of abandoned farms resulted and are today unoccupied.

The same thing has since happened, to some extent, in the more densely populated sections of the Middle West. And were it not for the fact that newer and stronger lands are constantly being drained and brought into cultivation, the decline of fertility in the Middle West would make a startling showing in the annual crop returns.

This problem will eventually be solved through the raising of more and better live stock on corn belt farms with the silo and alfalfa or clover as chief aids to economical meat production and soil fertility. Causes are now at work in this direction which are bound to succeed, because impelled by both public need and self interest of the farmers.

4. Because the raising and feeding

of live stock on farms enhances soil fertility. Soil fertility is the foundation of agricultural prosperity, and agricultural prosperity is the basis of general prosperity.

The broad significance of this fact is gradually becoming recognized. This is due almost wholly to the work of the agricultural colleges and experiment stations, the International Live Stock Exposition, and kindred agencies. Whatever encourages expansion and improvement in live stock production contributes directly to increased and improved crop growing. Indeed, permanently successful general agriculture is impossible without stock raising as a very prominent and essential part of it.

5. Because neither corn prices nor land values can be maintained without the raising and feeding of live stock on farms.

A permanent scarcity of live stock would bring a permanent decline in the price of corn, and a decline of land values would be sure to follow.

So that if the farmers of the United States, especially in the corn belt, wish to maintain the price of corn and the market value of their lands, as well as the fertility of their farms and the utilization of farm waste by turning it into money, they had better "get busy" raising more live stock and especially beef cattle. They cannot begin too soon.

6. Because live stock utilizes farm waste and turns it into money.

This needs no argument. Every farmer knows from practical experience the truth of the above statement. Many millions of dollars worth of valuable roughage is wasted every season, which should be profitably consumed. The advantage which the stock farmer has over the grain farmer in this respect should prove a strong inducement to unite stock raising and crop growing, especially in the corn belt.

7. Because live stock condenses values on the farm; can walk to the market or shipping point; can be transported and marketed at less expense, and realizes greater net returns than any other farm products.

To market crops of grain and forage via the beef, pork, sheep and wool route, gives hired help regular work, condenses bulk and value on the farm, and saves labor, time and expense in transportation, therefore adds to net proceeds, besides leaving behind on the farm that which enriches the soil and adds to crops of grain.

8. Because the market demands younger animals for slaughter.

The prevailing demand from consumers is for small, choice, tender cuts of the various meats, which can be quickly cooked and served immediately: for "baby beef," veal, lamb and young pork, instead of for heavier cuts from the larger carcasses of mature animals.

This marked public preference for the carcasses of young animals, and decline in the popular demand for heavy carcasses, is likely to continue, as such has been the growing tendency on the part of consumers within the last few years, both at home and abroad. This means that animals will be fattened for market and slaughtered at an earlier age, and a much less quantity of meat will be the yield from the same number of head sent to market.

A larger number of animals, therefore, will be required in future to meet an equal demand for meats. It is also certain that the demand will increase with the rapid growth of population. Taking these two factors together, it follows that the number of cattle, hogs and sheep in the country must increase faster than the rate of population, in order to meet the prospective probable demand for meats.

9. Because pure-bred stock is now selling at relatively low prices, and those who stock up first and stay in longest will reap the greatest rewards in improved herds and more profitable returns.

Every material factor in the situation points to the conclusion that from now forward it will pay to raise improved live stock on high-priced corn belt lands.

The decline of the ranges, the consequent scarcity of stockers and feeders, the prevailing high prices for both young and fat animals, especially

those of early maturity, the liquidation during recent months owing to drouth and other causes, the shortage of breeding stock with inevitable future shortage at market in consequence, the rapid increase of population, the advance in the values of all live stock, at home and abroad, and the success of the silo and other practical methods of economy in meat production, all render irresistible the conviction that the growing and fattening of live stock for market rests on a more solid and permanent basis of profit for the producer than ever before, and that sure and ample rewards await the corn belt farmer who stocks up with good breeding stock and pure bred sires at the present comparatively low prices and stays by them, not only in direct money profits, but also in greater crop yields from the increased fertilizing elements obtained.

10. Because association with domestic animals on the farm is essential to the right development of the character and practical knowledge and ability of children.

Such association, acquired during the care and growth of the animals, from birth period to time of marketing, is a wholesome educational and altogether beneficial experience which no farmer's family should miss. These influences are more valuable than money, yet they both save and make money, directly and indirectly.

11. Because the presence of live stock inspires a love for the farm, and tends to prevent desertion of the farm for the city.

The love of children for the farm or their lack of interest in it, and whether they stay on it or leave for the city when grown, depend consciously or unconsciously in large measure upon the presence of growing animals on the farm. Crops alone cannot inspire the interest nor infuse affection which create home ties, as do living beings that appeal to us for care and protection. This really is an important matter which parents will do well to consider, especially those who are wondering how to keep the boy or girl upon the farm.

12. Because it is every farmer's sacred duty to leave his farm in at least as good condition as when he found it, for use by future generations, and this he cannot do without the fertilizing elements furnished by live stock.

One of the most hopeful signs of the times is the general awakening of civic conscience in the public mind, including a keener regard than ever before for the inherent rights of posterity. We have no right to neglect, waste or destroy that upon which the very lives of our children and those who come after them will depend. This is a matter of conscience and duty for every farmer to settle with himself. It is here offered as not the least of the arguments advanced for raising more live stock.

Objections Answered.

Having stated some of the reasons why corn belt farmers should raise more live stock, it is now in order to answer several objections that have been raised by those who do not seem to have been broadly informed concerning the world's live stock and meat situation, nor to have grasped the full significance of certain developments in this country.

"Foreign Competition in Consequence of Tariff Removal."

Answer: Tariff removal cannot materially alter world values, and cannot, therefore, materially affect prices in this country, especially as there is a scarcity of meat animals in all other countries.

Canada is short of live stock, Mexico's cattle industry is demoralized by drouth and revolution, Brazil is not yet under headway and does not raise enough live stock to feed her own people, and Argentina and Australia together have not sufficient surplus to supply both Europe and this country. Whatever meat is brought from either country to the United States is so much taken away from England's needs, and this competition is likely to raise prices in both countries. No other considerable source of meat supply is available.

North American stock raisers have nothing to fear from South American or other foreign competition.

"Packers Control the Market."

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men. They cannot control the market, because they cannot control the sources of supply, nor the volume of consumption. They have storage capacity for only about twelve days' killing at most, and must sell their products, even at a loss, and sometimes their losses are heavy. They would prevent extreme prices if they could. The law of supply and demand governs the market.

The Chicago market is owned and managed by men who have no interest in the packing business. Prices are established as a result of continual competition there between the leading packers, Eastern slaughterers, local and outside Western slaughterers and feeder buyers. Shippers to the Chicago market get the full benefit of this wholesome competition in trade.

"Corn Too High."

Answer: From 75 to 80 per cent of our enormous annual corn crop is fed to live stock on farms. If any considerable proportion be hoarded or marketed as corn, instead of being fed to live stock as usual, the inevitable result will be a big drop in the price of corn. A general decrease in either the volume of production or price of corn, would cause a decline of land values in the corn belt, and that would decrease the value of all lands. Hence, to maintain the price of corn and the general market value of land, both in and out of the corn belt, it is necessary to raise and feed more live stock on corn belt farms, especially cattle, which means that in no other way can corn belt farmers get such large net returns for the crops they raise.

"Tight Money vs. Cattle Raising."

Answer: Tight money may be a temporary objection to cattle raising and feeding in some instances.

But bankers generally have learned from experience that there is no better security for a loan than growing cattle upon a farm. Not only is the collateral constantly increasing in value, but it can be realized upon at any time in cash to the full amount of its value, which is always a definite market quantity that can be quickly and easily ascertained.

It may be that the country is now undergoing a season of financial and industrial readjustment, but if the natural timidity of capital under such conditions may be referred to as a period of financial stringency, there are both good reason and the experience of recent years as a precedent, for believing that the season of distrust will be a short-lived one.

No country basing its affairs on agricultural prosperity such as ours, with such abundant mineral and other natural resources, such splendid manufacturing development, and such wonderful transportation facilities, at peace with the world and possessing the profound respect and good will of all highly civilized nations, can long remain under a cloud of financial and industrial depression.

On the simple basis of supply and demand the world over, the position of the live stock grower of the United States is eminently sound, and no farmer of the corn belt need hesitate on the score of future prospects to raise and mature all the animals which his farm can conveniently carry.—John A. Spoor.

IMPORTANCE OF ORGANIZATION.

Editor Rural World:—Old Shylock is now whetting his knife for more human flesh, and he is among the unorganized and unprotected to get it. I saw him in our farmers' institute under the guise of an educator, telling the farmers how to increase production, and I wondered if our educators had studied the report from the Department of Agriculture. Our Department of Agriculture is to us farmers what the Department of Labor and Commerce is to the commercial world and organized labor. If the War Department should issue a warning the whole nation would take notice, when the Secretary of Commerce sends out a warning the commercial world takes heed. Now our Secretary of Agriculture has warned us as an industrial class that there is danger in advance along the lines we are pursuing, and he would have us farmers rally to the support of our industry. While the shylocks are

preaching increased production to the rank and file, Mr. Houston tells us that increased production does not increase the farmer's income and will not reduce the cost of living to the makers of wealth. That it does not feed the hungry children nor aid them to help themselves to live like human beings; that the average income of the grain farmer for his labor is only \$28. Now our educators tell us to raise cattle and other live stock, in a short time we will have the stock farmer in the same condition, and Shylock's knife will be ready for his work. Those fellows are hovering the grindstone and the grain dealers and stock buyers and meat trust pouring water on every plan to enlighten the farmer along the path of least resistance. The mystery to the farmer is why are those fellows so deeply interested in increased production, but never a word about a better market system.

If you want to know where this insidious force lies, read the Chicago Grain Journal, on page 154, of January 25, bottom of column thirty-one. With only two papers in the United States to teach the farmer a better market system, viz: The Rural World and The Equity Exchange, the only medium through which the rank and file have an opportunity to aid each other and make a kick on an injustice. Organized greed controls all others, and they would not get the advertising matter which is an additional expense to the consumer. If you are not getting a square deal just let Rural World or The Equity Exchange have a few lines; they stand for equity, and equity stands for the square deal. How much longer will we continue to permit the distributors of our produce to control the market; weigh, grade and price our products? This condition makes the farmer feel his inequality, that he is belittled and an indication of retrogression are seen on every side. Speak to a group of young men who work for a corporation and they take it as a joke. This is an industrial depression from a lack of organization.

Some will say: Show us how we can organize that we may increase our profits on the farm and decrease the cost of living and we will do it. Organize into the Equity Union and buy direct from factory and stop supporting thousands of commercial travelers at \$100 per month and expenses. Use your own brains and do not pay such high prices for some one to do your thinking for you. You and nine of your neighbors get together and start something. The National F. E. U. will aid you. L. L. LINE.

OPPORTUNITIES IN AGRICULTURE

It is rather thrilling to think that while agriculture is the oldest of all industries, it has undergone a revolution within 20 years.

This change has come about through peculiar and fundamental conditions, and is still going on. It is a change for the betterment of the farmer.

An older generation was wont to regard the farmer as a kind of clumsy animal to be jeered at and tolerated because he furnished the world its supply of food. "Hayseed," "clodhopper," and so forth were the epithets applied to country dwellers.

The farmer of day-before-yesterday sometimes grew big crops, but got so little for them that he was constantly in a state of semi-poverty akin to the down-trodden peasantry of Europe. He worked hard and enjoyed few luxuries.

Today all this is changed. The farmer is not only regarded with considerable degree of respect by city people, but those same city folks are themselves wishing they could "get back to the land." They are educating their sons—plenty of them—for an agricultural career. Some of them are actually getting back to nature and generally they make good at the new business of wresting a living from the soil.

The average farmer of today is a business man. He follows known methods of culture and stock feeding; he has more comforts and more leisure than the average mechanic or laboring man of the cities. Many farmers of today live in luxury with

3 FOR 1

By special arrangement we are able to offer the readers of Colman's Rural World this very attractive offer. Offer is subject to withdrawal without notice, so you must act quickly.

COLMAN'S RURAL WORLD - 1 YEAR
FARM AND HOME - 1 YEAR
FARM LIFE - 3 YEARS

REGULAR PRICE \$2.00

OUR SPECIAL PRICE IS \$1

This offer should be accepted AT ONCE and is for new or renewal subscriptions. Send all remittances to

Colman's Rural World

718 Lucas Ave.,

St. Louis, Mo.

all sorts of conveniences around them. they buy automobiles and gas engines and electric lighting outfits and china bathtubs and subscribe for a bunch of farm papers.

Many causes lie back of this revolution in rural life. It is not our present purpose to discuss them but merely to emphasize the big fact that the opportunities on the farm of earning an independent living and even amassing a nice little cash balance besides, are greater than ever before; the chances for making the land keep a family in comfort are greater than the chances for doing the same thing in the shops, factories, offices and various wage occupations of the city.

The farmer is both capitalist and worker; he works for himself; he lives amidst scenes of his industry; all the members of his family may contribute to the success of the undertaking by the labor of their hands; his work is conducted amid healthful surroundings; he has a wealth of literature and other agencies at his beck and call for the general education of himself and his children in the best modes of conducting farming operations; he can enjoy the benefits of a self-supporting home, and if he is thrifty and a good manager, he can make money besides.

The best type of farm in America is the self-supporting home with diversified farming as its keynote, but with a specialty or money crop on the side.

The extent to which this specialty may be made to earn independence and commercial success is measured only by the ability of the farmer himself.—H. A. Bereman.

CRACKED HEELS.

This ailment usually sets in with swelling, heat and tenderness of the hollow of the heel, with erections of the hairs and redness (in white skins), with stiffness and lameness, which may be extreme in irritable horses. Soon light cracks appear transversely, and they may gain in depth and width, and may even suppurate.

More frequently they become covered at the edges or throughout by firm incrustations resulting from the drying of the liquids thrown out, and the skin becomes increasingly thick and rigid. A similar condition occurs behind the knee and in front of the hock (malanders and sallenders), and may extend from these points to the hoof, virtually incasing that side of the limb in a permanent incrusting sheath.

Causes.—Besides a heavy lymphatic constitution, which predisposes to this affection, the causes are overfeeding on grain, unwholesome fodder, close, hot, dirty stables, constant contact with dung and urine and their emanations; working in deep, irritant mud;

above all, in limestone districts, irritation by dry limestone or sandy dust in dry weather on dirt roads; also cold drafts, snow and freezing mud, washing the legs with caustic soap, wrapping the wet legs in thick woolen bandages which soak the skin and render it sensitive when exposed next day; clipping the heels; weak heart and circulation, natural or following overwork; imperfect nourishment, impure air, lack of sunshine, chronic exhaustion, or debilitating diseases, or functional or structural diseases of the heart, liver or kidneys, here last induce dropsical swellings of the limbs (stocking), weaken the parts and induce cracking. Finally the cicatrix of a pre-existing crack, weak, rigid and unyielding, is liable to reopen under any severe exertion; hence rapid paces and a heavy draft are active causes.

Treatment.—In treatment the first step is to ascertain and remove the cause whenever possible. If there is much local heat and inflammation, a laxative, five drams aloes or one pound Glauber's salts, may be given, and for the pampered animal the grain should be reduced or replaced altogether by bran mash, flaxseed and other laxative non-stimulating food. In the debilitated, on the other hand, nutritious food and bitter tonics may be given, and even a course of arsenic, five grains arsenic with one dram of bicarbonate of soda daily.

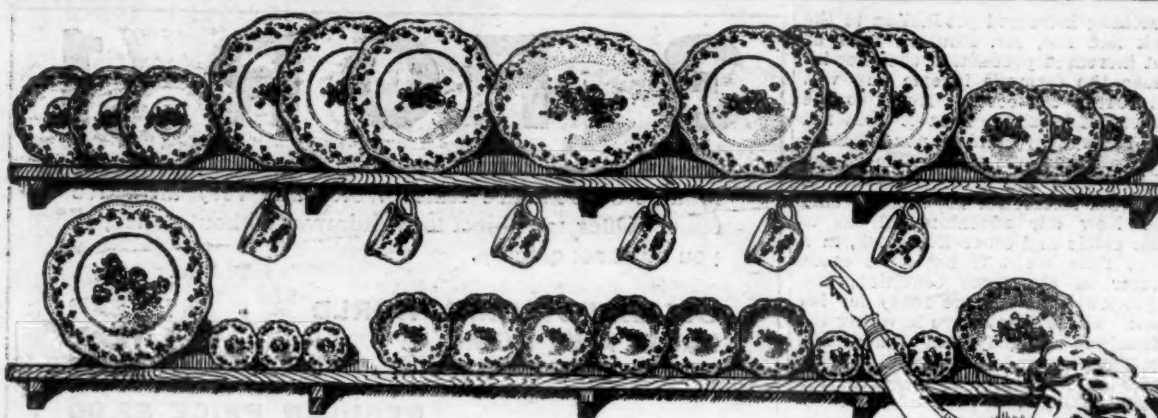
When the legs swell, exercise on dry roads, hand-rubbing, and evenly applied bandages are good, and mild astringents, like extract of witch-hazel, may be applied and the part subsequently rubbed dry, and bandaged. If there is much heat, but unbroken skin, a lotion of two drams of sugar-of-lead on a thin bandage, covered in cold weather with a dry one.

The same may be used after the cracks appear, or a solution of sulphurous acid one part, glycerine one part, and water one part, applied on cotton and well covered by a bandage. In case these should prove unsuitable to the particular case, the part may be smeared with vaseline one ounce, sugar-of-lead one dram, and carbolic acid 10 drops.—James Law, F. R. C. V. S.

DIVERSIFICATION NEEDED.

Where advisable, we must become to a certain extent diversified farmers in order that our income may be properly balanced to maintain our financial equilibrium when the fruit yield is heavy and are low, or when the crop is light and the price is high. We must get acquainted with the cow, the hog and chickens, and at least grow enough vegetables to eat.

The more fat in a given quantity of milk the more butter it will make, and within limits the more and better cheese.



FREE

**33 PIECE
DINNER SET
AND
41 EXTRA
PRESENTS**

**74
ARTICLES
ABSOLUTE
FREE**



Positively the most liberal and biggest dish offer ever made. No home has enough dishes—good dishes. This is a wonderful collection of presents. We can only show the beautiful dishes—the rest of the presents we haven't room to show—but a full description and picture of them will be sent you the minute you send us your name. **ALL ARE ABSOLUTELY FREE** to introduce our business in your locality. All that is required is a few minutes of your spare time. Read below carefully, and send the coupon and I will do the rest.

Description of Dishes

Our magnificent 33-piece dinner set is the product of one of the finest and largest potteries in the world, the old rose and gold leaf design having become famous in aristocratic homes.

They are full size for family use, and the set consists of:

- 6 large plates.
- 6 teacups
- 6 saucers.
- 6 butter plates.
- 6 fruit or cereal dishes.
- 1 deep vegetable dish.
- 1 large meat platter.
- 1 large cake or bread plate.

In the center of each piece there is a cluster of roses depicted in their natural colors and surrounded by brilliant green foliage so that almost the only thing missing is the fragrance.

The edge of each piece is enriched with a gold border which adds greatly to the beauty of the dishes. The ware itself is pure white, and is dainty enough to delight the most fastidious housekeeper.

Each dish bears the genuine stamp and TRADE MARK of the great world-renowned Owen China Company of Minerva, Ohio. This stamp guarantees the high superior quality of this set of dishes, guarantees them absolutely. It proves to you that this is the real Owen chinaware.

Easy to Secure All

If you want our 33-piece dinner set, and the 41 other presents, simply sign your name on the coupon below, and return it to us promptly and we will send you a LARGE ILLUSTRATION IN COLORS, showing this beautiful Dinner Set with its handsome decorations of red, green and gold against the pure white background of the ware itself.

We will also send you SIXTEEN of our BIG NEEDLE CASES—115 best grade, big eye, extra quality steel needles of all sizes in each needle case.

If you will show these Needle Cases to sixteen of your lady friends and ask them for 25 cents each IN CONNECTION with another special offer, which we will tell you about in our first letter, we will send you, by freight, this handsome 33-piece Rose and Gold Decorated Dinner Set, **ABSOLUTELY FREE, AS A PRIZE**, and in addition the 40 post cards and a beautiful extra surprise gift for being prompt.

Just write your name and address on the coupon and mail it to us and the 16 needle cases, the pretty many-colored picture of the dishes and full instructions for getting them will come right out to you in a jiffy. Send no money—just your name. We trust you with the sixteen needle cases—if you can't dispose of them, we will send postage for their return. Don't wait until these dinner sets are all gone. Send in the coupon now.

41 Extra Presents Free

The dishes are not all you get by any means.

Our plan is full of SURPRISES and DELIGHTS for those of our friends who are willing to lend a helping hand at spare times.

The very first letter you get from us will surprise you before you open it. It will also delight you by telling all about the big 40 post-cards collection which we want to give you in addition to the dishes. These beautiful post cards are so rare and attractive and printed in such a gorgeous array of colors that you will be delightfully surprised.

And still, THAT is not all. One of the prettiest surprises of all is kept a secret until the day you get the dishes and find a pretty present that you knew nothing about.

Isn't this a fascinating idea?

And what makes it more so is that we have something nice for everyone of your friends and neighbors, too. We'll tell you ALL about it as soon as we receive the coupon with your name on it.

The coupon starts the whole thing.

Send This Coupon NO MONEY

Colman's Rural World,
718 Lucas Ave., St. Louis, Mo.

Please send me, postpaid, the sixteen Big Needle Cases of best grade needles, together with Large Illustration, in colors, of the beautiful 33-piece dinner set and tell me all about the other gifts.

My Name.....

Full Address.....

THE ALL-IMPORTANT FACTOR.

To succeed you must organize. To be organized you must have some simple plan to do your business as a whole.

When you have a meeting, you want a president to preside. If you do have a meeting and no one to look to as president, you would not be organized.

When you wish to make up money as a whole, or pay out same, you want some one as secretary to keep records, also some one as treasurer to handle moneys.

To be organized as a body you must have your officers, also your committees. You must leave certain questions to committees to settle, sometimes very important questions you must make a committee of the whole body.

When you appoint a committee you must try to put on that committee those who are the most competent to serve and when you are appointed it is your duty to serve to the best of your ability.

All well-regulated societies must be organized; our government is only as strong as it is organized. Without our government organization we would be in worse state than we found the Indians when we came to America.

The farmer without an organization is making a mistake. The world is sure to size you up by the class to which you belong, the unorganized class or the ignoramus class. There is no way under heaven for farming to be a success, unorganized.

The organized working man with his organization which sees that laws are made to his interest and is organized for the happiness and prosperity of all concerned, is far more of a human being than the unorganized working farmer.

Some of you unorganized farmers think you are more independent than the organized working man because you always have a job and no boss, but the truth of the matter is, you work twelve or sixteen hours a day and everybody bosses you. Unorganized all you need expect to get to do is the hard work of our nation and it is all you rightly deserve for you are breaking one of God's laws, for we were not created to live to ourselves.

Now if you have more power organized, then when you go to do business you must be organized. You must do business as a whole, have a committee or a business manager; and we find it better to have a business manager instead of a committee, for it centralizes the power. You put in a good manager on Rochdale plan and this manager has more power and is far better position to do business than a business man, because he has your organized patronage.

What would the American public school, American church, American government, American railroad, American army, or anything be unorganized? I leave it with you; what is the American farmer, unorganized?

Just in as far as you feel the needs of organization, just that fast will organization be yours.

Unorganized farmers, as long as you place, or rather let the middle men have, your produce at their price and not connect yourself with consumers, you should suffer, and suffer hard, for the whole world must suffer for lack of an organization at your town.

The consumer is fast putting in connections to get your produce at first cost, and if you will not aid in the undertaking it certainly is right and just for the consumer to have the advantage of your low price. But if you will aid the consumer by an organization at your point, then what a glorious mutual organized undertaking and the happiness and prosperity that can be derived from same.

The all important factor for you is to have an organization at your point with a good manager, and the consumer with their manager, and when you do this you are following the law that was intended for mankind. The law of organization.

Remember, you cannot expect to advance without being an educated moral, fraternal people. You cannot honor your Creator and remain a "hay-seed."—Virgil Wirt, Virdin, Ill.